STIC SEARCH

INVENTOR SEARCH

=> d his l47

(FILE 'HCAPLUS' ENTERED AT 11:04:52 ON 30 AUG 2007)
L47 20 S L45 AND L46

=> d que l47
L16 QUE ABB=ON PLU=ON PSEUDOMONAS?
L18 QUE ABB=ON PLU=ON COPOLYM? OR CO(W)POLYM?
L26 763 SEA FILE=HCAPLUS ABB=ON PLU=ON ("FUKUI, TATSUKI"/AU OR "HONMA, TSUTOMU"/AU OR "IMAMURA, TAKESHI"/AU OR "KENMOKU, TAKASHI"/AU OR "KOZAKI, SHINYA"/AU OR "MIHARA, CHIEKO"/AU OR "YANO, TETSUYA"/AU)
L27 QUE ABB=ON PLU=ON SUGAWA E?/AU
L28 786 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 OR L26
L29 QUE ABB=ON PLU=ON FUKUI T?/AU
L30 QUE ABB=ON PLU=ON HOMA T?/AU
L31 QUE ABB=ON PLU=ON IMAMURA T?/AU
L32 QUE ABB=ON PLU=ON KENMOKU T?/AU
L33 QUE ABB=ON PLU=ON KOZAKI S?/AU
L34 QUE ABB=ON PLU=ON MIHARA C?/AU
L35 QUE ABB=ON PLU=ON YANO T?/AU
L38 QUE ABB=ON PLU=ON (CANON(W)KABUSHIKI?)/PA,CS,SO,CO
L41 9410 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 OR (L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35)
L42 122 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L38
L43 119 SEA FILE=HCAPLUS ABB=ON PLU=ON (L42 OR L28) AND L16
L45 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L43 AND L18
L46 QUE ABB=ON PLU=ON PY<2003 OR PRY<2003 OR AY<2003 OR MY<2003 OR REVIEW/DT
L47 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L45 AND L46

=> d his l61

(FILE 'MEDLINE, BIOSIS, DRUGU, EMBASE' ENTERED AT 11:14:08 ON 30 AUG 2007)
L61 7 S L60 AND L46

=> d que l61
L16 QUE ABB=ON PLU=ON PSEUDOMONAS?
L17 QUE ABB=ON PLU=ON POLYHYDROXYALKANOATE OR POLY(W)HYDROXYALKANOATE OR POLY(W)HYDROXY(W)ALKANOATE
L26 763 SEA FILE=HCAPLUS ABB=ON PLU=ON ("FUKUI, TATSUKI"/AU OR "HONMA, TSUTOMU"/AU OR "IMAMURA, TAKESHI"/AU OR "KENMOKU, TAKASHI"/AU OR "KOZAKI, SHINYA"/AU OR "MIHARA, CHIEKO"/AU OR "YANO, TETSUYA"/AU)
L27 QUE ABB=ON PLU=ON SUGAWA E?/AU
L28 786 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 OR L26
L29 QUE ABB=ON PLU=ON FUKUI T?/AU
L30 QUE ABB=ON PLU=ON HOMA T?/AU
L31 QUE ABB=ON PLU=ON IMAMURA T?/AU
L32 QUE ABB=ON PLU=ON KENMOKU T?/AU
L33 QUE ABB=ON PLU=ON KOZAKI S?/AU
L34 QUE ABB=ON PLU=ON MIHARA C?/AU
L35 QUE ABB=ON PLU=ON YANO T?/AU
L36 QUE ABB=ON PLU=ON L27 OR (L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35)
L38 QUE ABB=ON PLU=ON (CANON(W)KABUSHIKI?)/PA,CS,SO,CO
L46 QUE ABB=ON PLU=ON PY<2003 OR PRY<2003 OR AY<2003 OR MY<2003 OR REVIEW/DT
L57 255 SEA L28
L58 10077 SEA L36 OR L57
L59 60 SEA L58 AND L38
L60 34 SEA L59 AND (L16 OR L17)
L61 7 SEA L60 AND L46

=> dup rem l47 l61
FILE 'HCAPLUS' ENTERED AT 11:22:00 ON 30 AUG 2007

FILE 'BIOSIS' ENTERED AT 11:22:00 ON 30 AUG 2007

PROCESSING COMPLETED FOR L47
PROCESSING COMPLETED FOR L61
L63 27 DUP REM L47 L61 (0 DUPLICATES REMOVED)
ANSWERS '1-20' FROM FILE HCAPLUS
ANSWERS '21-27' FROM FILE BIOSIS
INVENTOR SEARCH RESULTS

=> d l63 1-27 ibib cd ab

L63 ANSWER 1 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:430974 HCAPLUS Full-text
DOCUMENT NUMBER: 141:5889
TITLE: Production of novel polyhydroxyalkanoate copolymers by Pseudomonas
INVENTOR(S): Kenmoku, Takashi; Yano, Tetsuya; Mihara, Chieko; Kozaki, Shinya; Honma, Tsutomu ; Fukui, Tatsuki; Imamura, Takeshi
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan; Sugawa, Etsuko
SOURCE: PCT Int. Appl., 245 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004044213	A1	20040527	WO 2003-JP13531	2003 1023
JP 2004162044	A	20040610	JP 2003-356748	2003 1016
AU 2003274742	A1	20040603	AU 2003-274742	2003 1023
US 2006211100	A1	20060921	US 2005-531689	2005 0415

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 2002-310250 A 2002 1024
JP 2003-356748 A 2003 1016
WO 2003-JP13531 W 2003 1023

ED Entered STN: 27 May 2004
AB A process is provided for the production of novel polyhydroxyalkanoate copolymers by Pseudomonas bacteria grown on various precursor fatty acids. Also provided is a process for the chemical oxidation of these polyhydroxyalkanoates to obtain different unique polymers.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:370985 HCAPLUS Full-text
DOCUMENT NUMBER: 140:357893
TITLE: Biosynthesis of novel polyhydroxyalkanoate containing 3-hydroxy-ω-(4-carboxyphenyl)alkanoic acid units and composition thereof
INVENTOR(S): Fukui, Tatsuki; Yano, Tetsuya; Mihara, Chieko; Kozaki, Shinya; Honma, Tsutomu ; Kenmoku, Takashi
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
SOURCE: PCT Int. Appl., 278 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004037889	A1	20040506	WO 2003-JP13532	2003 1023
JP 2004315782	A	20041111	JP 2003-356982	2003 1016
AU 2003275603	A1	20040513	AU 2003-275603	2003 1023
US 2006079662	A1	20060413	US 2005-531226	2005 0413

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:
JP 2002-310310 A 2002 1024
JP 2003-92408 A 2003 0328
JP 2003-356982 A 2003 1016
WO 2003-JP13532 W 2003 1023

ED Entered STN: 07 May 2004
AB A polyhydroxyalkanoate containing in a mol. thereof one or more 3-hydroxy-o-(4-carboxyphenyl)alkanoic acid units represented by chemical formula (I); wherein m is an integer selected from 0 to 7; R1 is an H, Na or K atom; and when more than one unit exists, n and R1 may differ from unit to unit, resp. Thus, 5-phenylvaleric acid and 5-(4-vinylphenyl)valeric acid were microbial copolymd. using Pseudomonas cichorii in polypeptone to a give (R)-3-Hydroxy-5-phenylvaleric acid-(R)-3-hydroxy-5-(4-vinylphenyl)valeric acid isotactic copolymer which was oxidized by MnO2 to a give (R)-3-hydroxy-5-phenylvaleric acid-(R)-3-hydroxy-5-(4- carboxyphenyl)valeric acid isotactic copolymer. The polyhydroxyalkanoate has high thermal stability, charge stability, a high charge amount, improved dispersibility and biodegradability together, and therefore, suitable for resin moldings, and binders and charge controlling agents for toners used in the electrophotog. process.

L63 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:411682 HCAPLUS Full-text
DOCUMENT NUMBER: 140:414894
TITLE: Polyhydroxyalkanoates having cyclohexyl structures in side chains, their microbial manufacture, and their use for resin binders, electrophotographic toners, and electrophotographic image-forming process and apparatus
INVENTOR(S): Houma, Tsutomu; Furusaki, Shinya; Yano, Tetsuya
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 63 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004143288	A	20040520	JP 2002-309635	2002 1024
JP 3647432	B2	20050511		
US 2004143087	A1	20040722	US 2003-692206	2003 1022

PRIORITY APPLN. INFO.: JP 2002-309635 A 2002 1024
OTHER SOURCE(S): MARPAT 140:414894
ED Entered STN: 21 May 2004
AB Polyhydroxyalkanoates (PHA) having monomer units I (R1 = H, CN, NO2, halo, Me, Et, Pr, CF3, C2F5, C3F7), useful for electrophotog. toner binders, are manufactured by culturing microorganisms in media containing alkanoic acids II (R1 = same as above). Thus, Pseudomonas cichorii YN2 (FERM BP-7375) was shake-cultured in an M9 medium containing 0.5% yeast extract and 6.0 mM 3-cyclohexylpropionic acid at 30° to give 210 mg/L of PHA comprising 94% 3-hydroxy-3-cyclohexylpropionic acid unit and 6% medium-chain-length 3-hydroxyalkanoic acid units. A magenta toner containing the PHA, C.I. Pigment Red 114, NXVP 434 (charge controlling agent), and hexamethyldisilazane-treated hydrophobic silica powder showed good charging properties and biodegradability and gave high-quality images showing no fogging even under high temperature and humidity (30°, relative humidity 80%).

L63 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:57584 HCAPLUS Full-text
DOCUMENT NUMBER: 140:112164
TITLE: Thermally stable polyhydroxyalkanoate copolymers having ester group-containing units on the side chain and their manufacture
INVENTOR(S): Imamura, Takeshi; Kenmoku, Takashi; Fukui, Itsuki; Sugawa, Etsuko; Yano, Tetsuya
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 48 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004018729	A	20040122	JP 2002-177285	2002 0618
JP 3880462	B2	20070214		

PRIORITY APPLN. INFO.: JP 2002-177285 2002 0618

ED Entered STN: 23 Jan 2004

AB The copolymers have OCH[(CH2)nCO2R]CH2CO (R = Me, Et, Me2CH, Me3C, PhCH2; n = 1-6) units and OCH[(CH2)mR']CH2CO (m = 1-8; R' = Ph, thienyl, cyclohexyl) units and are manufactured from ROCO(CH2)pCH2CH2CO2H (p = 1-6) and R'(CH2)qCH2CH2CO2H (q = 1-8) by biosynthesis using microorganisms. Thus, Pseudomonas cichorii YN2 was incubated in M9 medium containing polypeptone, 5-phenylvaleric acid, and monomethyl sebacate at 30° for 40 h, centrifuged, washed with MeOH, freeze-dried, extracted with CHCl3, filtered, evaporated, precipitated with cold MeOH, and dried to give a polymer having OCH[(CH2)4CO2Me]CH2CO, OCH[(CH2)2Ph]CH2CO, and OCH[(CH2)6CO2Me]CH2CO units with Mn 8.1 + 104 and Mw 15.9 + 104.

L63 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:57581 HCAPLUS Full-text
DOCUMENT NUMBER: 140:129835
TITLE: Method for manufacture of pigmented coating compositions without the needs for dispersants
INVENTOR(S): **Honma, Tsutomu**; Nomoto, Takeshi; Furusaki, Shinya; **Yano, Tetsuya**
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 55 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004018723	A	20040122	JP 2002-177236	2002 0618

PRIORITY APPLN. INFO.: JP 2002-177236 2002 0618

ED Entered STN: 23 Jan 2004

AB The method uses pigments which have surface at least partially coated or encapsulated by poly(hydroxyalkanoates) having specific pendants, graft or modification groups for improving pigment self dispersibility. The coating or encapsulation of pigments is done biol. using poly(hydroxyalkanoate) polymerase and hydroxyalkanoyl-coenzymes (as substrates).

L63 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:34935 HCAPLUS Full-text
DOCUMENT NUMBER: 138:98160
TITLE: Microbial poly(hydroxy alkanoate)-containing charge controlling agents for use in electrostatographic developer toners in image formation method and apparatus
INVENTOR(S): **Yano, Tetsuya**; **Imamura, Takeshi**; **Kenmoku, Takashi**; **Sugawa, Etsuko**
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 2003012778 A 20030115 JP 2001-180627
2001
0614
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PRIORITY APPLN. INFO.: JP 2001-133552 A
2001
0427
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ED Entered STN: 15 Jan 2003
AB The agents have monomer units shown as AmB(1-m) [A = CHRCH2CO2; B = CH((CH2)nMe)CH2CO2 and/or CH(CH2CH:CH(CH2)kMe)CH2CO2; m.= 0.01-1; n = 0-10; k = 3, 5; R = (CH2)qC6H4R1, (CH2)rOC6H4R2, (CH2)sC6H10R3, (CH2)tC(O)C6H4R4; R1-R4 = H, halo, CN, NO2, CF3, C2F5, C3F7; r, q, s, t = 1-8]. Electrostatog. developer toner binders containing the agents, electrostatog. developer toners containing binder resins, colorants, and the agents, image formation method and apparatus using the electrostatog. developer toners are also claimed. The agents are biodegradable and environmentally friendly and have improved dispersibility, changeability, stability, etc.

L63 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:29442 HCAPLUS Full-text
DOCUMENT NUMBER: 138:90972
TITLE: Biodegradable poly(hydroxyalkanoate) fishing lures and their manufacture
INVENTOR(S): **Sugawa, Etsuko; Imamura, Takeshi; Kenmoku, Takashi; Honma, Tsutomu; Yano, Tetsuya**
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

JP 2003009721 A 20030114 JP 2001-201112
2001
0702
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PRIORITY APPLN. INFO.: JP 2001-201112
2001
0702
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ED Entered STN: 14 Jan 2003
AB The lures are made of polymers having monomer unit compns. [OCH[(CH2)bX]CH2CO]m(OCHYCH2CO)1-m [X = (un)substituted Ph, OPh, cyclohexyl, COPh, 2-thienyl, 2-thienylcarbonyl; Y = (CH2)nMe, CH2CH:CH(CH2)kMe; b = 1-8; n = 0-10; k = 3, 5; m = 0.01-1]. Thus, **Pseudomonas** cichorii YN2 FERM BP-7375 was cultured in a medium containing 5-phenylvaleric acid to give polymer comprising 96% 3-hydroxy-5-phenylbutyrate unit and 4% 3-hydroxybutyrate unit, which was molded to give a rod-like test piece showing good flexibility, recovery from bending, tensile strength, and biodegradability.

L63 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:693179 HCAPLUS Full-text
DOCUMENT NUMBER: 139:214919
TITLE: Polyhydroxyalkanoates containing a vinylphenyl structure in their side chain and method of manufacturing the same
INVENTOR(S): **Honma, Tsutomu; Sugawa, Etsuko; Yano, Tetsuya; Imamura, Takeshi; Kenmoku, Takashi; Fukui, Tatsuki**
PATENT ASSIGNEE(S): **Canon Kabushiki** Kaisha, Japan
SOURCE: Eur. Pat. Appl., 56 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

EP 1340778	A1	20030903	EP 2003-4350	2003 0228
		<--		
EP 1340778	B1	20060118		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004238592	A	20040826	JP 2003-37322	2003 0214
		<--		
JP 3689700	B2	20050831		
US 2003204044	A1	20031030	US 2003-372285	2003 0225
		<--		
US 6645743	B2	20031111		
CN 1445257	A	20031001	CN 2003-106688	2003 0228
		<--		
PRIORITY APPLN. INFO.:			JP 2002-54897	A 2002 0228
		<--		
			JP 2002-362962	A 2002 1213
		<--		
			JP 2003-37322	A 2003 0214

ED Entered STN: 05 Sep 2003

AB A polyhydroxyalkanoate (PHA) having a desired configuration is produced using a raw material containing ω-(4-vinylphenyl)- alkanoic acid and ω-substituted alkanoic acid in which a group having a ring structure selected from Ph, thienyl, and cyclohexyl structures substitutes therefor on the end thereof by producing a PHA copolymer containing the corresponding 3-hydroxy-ω-(4-vinylphenyl)-alkanoate unit and the corresponding 3-hydroxy-ω-substituted alkanoate unit by making use of a microorganism capable of producing the PHA or by oxidizing a predetd. portion of the corresponding PHA. Pseudomonas cichorii YN2 was cultivated with 5-(4-vinylphenyl)-valeric acid and 5-phenyl-valeric acid to give a polyhydroxyalkanoate.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:653269 HCAPLUS Full-text
DOCUMENT NUMBER: 139:180526
TITLE: Polyhydroxyalkanoate copolymer including unit having bromo group in side chain and production method thereof
INVENTOR(S): **Honma, Tsutomu; Kozaki, Shinya; Imamura, Takeshi; Kenmoku, Takashi; Fukui, Tatsuki; Sugawa, Etsuko; Yano, Tetsuya**
PATENT ASSIGNEE(S): **Canon Kabushiki Kaisha**, Japan
SOURCE: Eur. Pat. Appl., 46 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1336634	A2	20030820	EP 2003-3418	2003 0214
		<--		
EP 1336634	A3	20040107		

EP 1336634 B1 20051123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
JP 2004196832 A 20040715 JP 2002-362594
2002
1213
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JP 3754956 B2 20060315
US 2003194789 A1 20031016 US 2003-359600
2003
0207
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US 7135540 B2 20061114
CN 1438258 A 20030827 CN 2003-104451
2003
0214
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PRIORITY APPLN. INFO.: JP 2002-39255 A
2002
0215
<--
JP 2002-310268 A
2002
1024
<--
JP 2002-362594 A
2002
1213
<--
ED Entered STN: 22 Aug 2003
AB The title polyhydroxyalkanoate copolymer, prepared by microorganisms using a ω-bromoalkanoic acid, is thermally stable and capable of arbitrarily controlling phys. properties. The polyhydroxyalkanoate copolymer includes a 3-hydroxy-ω-bromoalkanoic acid unit of OCH[(CH2)nBr]CH2CO (n = 1-8) and a unit of OCH[(CH2)mR]CH2CO (m = 1-8; R = Ph, thienyl, cyclohexyl) within a same mol.

L63 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:944749 HCAPLUS Full-text
DOCUMENT NUMBER: 138:14534
TITLE: Biodegradable cards comprising polyhydroxyalkanoates with good extrudability, heat resistance, and mechanical properties
INVENTOR(S): **Yano, Tetsuya; Imamura, Takeshi; Kenmoku, Takashi; Sugawa, Etsuko**
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002356542	A	20021213	JP 2001-164772	2001 0531

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PRIORITY APPLN. INFO.: JP 2001-164772
2001
0531
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ED Entered STN: 13 Dec 2002
AB The cards, useful for credit cards, IC cards, etc., contain polyhydroxyalkanoates having a repeating unit of OCHXCH2CO [X = (CH2)aR1, (CH2)bCH2C6H4R2, (CH2)cOC6H4R3, (CH2)dCH2C6H10R4, (CH2)eCOC6H4R5, (CH2)fCH2Y, (CH2)gCOY; R1 = H (a = 5-10), halo (a = 1-10), chromophore (a = 1-10), carboxy (a = 1-10), oxiranyl (a = 1-7); R2-4 = H, halo, CN, NO2, CF3, C2F5, C3F7; R5 = same as R2-4, Me, Et, Pr; Y = thienyl; b, d, f = 0-7; c, e, g = 1-8]. The cards may have layers for printing, thermal recording, magnetic recording, and embossing. Thus, a multilayer card comprising D-glucose-4-fluorobenzenepentanoic acid copolymer [prepared in culture media containing Pseudomonas cichorii YN 2 (FERM BP-7375)] showed tensile strength 24.0 MPa and good embossability.

L63 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:847920 HCAPLUS Full-text
DOCUMENT NUMBER: 137:338648
TITLE: Polyhydroxyalkanoate/thermoplastic resin blend compositions, their biodegradable heat-resistant moldings, and their thermoforming
INVENTOR(S): **Honma, Tsutomu; Imamura, Takeshi; Kenmoku, Takashi; Sugawa, Etsuko; Yano, Tetsuya**
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002322355	A	20021108	JP 2001-131691	2001 0427

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PRIORITY APPLN. INFO.: JP 2001-131691 2001 0427

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ED Entered STN: 08 Nov 2002
AB The compns., useful for containers for foods, beverages, cosmetics, and pharmaceutics, etc., contain (A) polyhydroxyalkanoates containing 1-99 mol% 3-hydroxy-5-benzoylvaleric acid (I)-derived monomer units OCH(CH2CH2COPh)CH2CO and (B) thermoplastic resins such as polyesters, polystyrenes, polypropylenes, poly(ethylene terephthalates), polyvinyls, and polyamides. Thus, a dry composition of 81:10:5:3:1 I-3-hydroxydecanoic acid-3-hydroxyoctanoic acid-3-hydroxyhexanoic acid-3- hydroxydodecanoic acid copolymer, prepared with Pseudomonas cichorii H45 from 5-benzoylvaleric acid was mixed with styrenic polymer (Styron 685) at ratio 50:50, sheeted by foam extrusion, and secondary molded into bowls for instant noodles having good biodegradability, high hardness and low brittleness at 25 and 100°, resp., Tg 40°, and Tm 156°.

L63 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:847533 HCAPLUS Full-text
DOCUMENT NUMBER: 137:353523
TITLE: Microbial production of polyhydroxyalkanoates for charge control agents for toners
INVENTOR(S): **Imamura, Takeshi; Sugawa, Etsuko; Yano, Tetsuya; Kenmoku, Takashi**
PATENT ASSIGNEE(S): **Canon Kabushiki** Kaisha, Japan
SOURCE: Eur. Pat. Appl., 82 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1254918	A2	20021106	EP 2002-9696	2002 0429

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EP 1254918	A3	20030226
EP 1254918	B1	20040331

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2003048968	A	20030221	JP 2002-125613	2002 0426

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JP 3848204	B2	20061122		
US 2003073804	A1	20030417	US 2002-133379	2002 0429

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US 6855472 B2 20050215
PRIORITY APPLN. INFO.: JP 2001-131693 A 2001 0427
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JP 2001-131811 A 2001 0427
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ED Entered STN: 08 Nov 2002
AB Polyhydroxyalkanoates are prepared from thienylsulfanyl alkanoic acids by microbial polymerization The polyhydroxyalkanoates are useful as biodegradable charge control agents having excellent charging characteristics, excellent dispersibility in the toner resin and improved spent property. 5-(2-Thienylsulfanyl) valeric acid was cultured with **Pseudomonas** cichorii YN2 to give a polyhydroxyalkanoate.

L63 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:831899 HCAPLUS Full-text
DOCUMENT NUMBER: 137:343851
TITLE: Electrostatic charge image developing toner and image forming method
INVENTOR(S): **Yano, Tetsuya**; Nomoto, Tsuyoshi; **Kozaki, Shinya**; **Honma, Tsutomu**
PATENT ASSIGNEE(S): **Canon Kabushiki** Kaisha, Japan
SOURCE: Eur. Pat. Appl., 80 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1253475	A2	20021030	EP 2002-9673	2002 0429
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EP 1253475	A3	20031126		
EP 1253475	B1	20070808		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003015359	A	20030117	JP 2001-210021	2001 0710
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PRIORITY APPLN. INFO.: JP 2001-133728 A 2001 0427
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JP 2001-210021 A 2001 0710
<--
OTHER SOURCE(S): MARPAT 137:343851
ED Entered STN: 01 Nov 2002
AB Electrostatic charge image developing toner allows to design the toner characteristics such as chargeability, flowability, stability in time and environmental stability uniform among the toners of different colors. The toner has a small particle size enough for enabling uniform dispersion and being excellent in color saturation and transparency. The toner also shows higher contribution to the environmental security. The toner includes a coloring agent of which at least a part of the surface is covered with polyhydroxyalkanoate (PHA). The toner is produced by dispersing the coloring agent in aqueous medium, then fixing PHA synthesizing enzyme to the coloring agent dispersed in the aqueous medium, then adding 3-hydroxyacyl CoA, and executing a PHA synthesizing reaction to cover at least a part of the surface of the coloring agent with PHA. The toner thus obtained is used for an image forming method.

L63 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:831842 HCAPLUS Full-text
DOCUMENT NUMBER: 137:331172
TITLE: Manufacture of biodegradable polyhydroxyalkanoates having phenylsulfinyl and/or phenylsulfonyl terminal structure on side chains and their use as charge control agents in electrophotographic toner binder for image forming apparatus

INVENTOR(S): Imamura, Takeshi; Sugawa, Etsuko; Yano, Tetsuya; Kenmoku, Takashi
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
SOURCE: Eur. Pat. Appl., 99 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1253162	A2	20021030	EP 2002-9675	2002 0429
EP 1253162	A3	20030226		
EP 1253162	B1	20060419		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003034716	A	20030207	JP 2002-127700	2002 0426
JP 3880444	B2	20070214		
US 2003100700	A1	20030529	US 2002-133671	2002 0429
US 6808854	B2	20041026		

PRIORITY APPLN. INFO.: JP 2001-131831 A 2001 0427
JP 2001-133640 A 2001 0427

ED Entered STN: 01 Nov 2002
AB The present invention provides a novel polyhydroxyalkanoate (PHA) containing a 3-hydroxyalkanoic unit which has at its side chain terminal a substituted phenylsulfinyl group and/or a substituted phenylsulfonyl group, and a production process thereof. The novel PHA can be produced by oxidizing with a peroxide a biosynthetic PHA containing a 3-hydroxyalkanoic unit which has at its side chain terminal a substituted phenylsulfanyl group. The novel PHA has a superior function as a charge control agent, besides is biodegradable, hence is contributable to environmental conservation. Thus, a typical polymer was prepared by transforming 5-(phenylsulfanyl)valeric acid in a culture of pseudomonas cichorii YN2, followed by oxidizing the polyhydroxyalkanoate with H2O2.

L63 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:831841 HCAPLUS Full-text
DOCUMENT NUMBER: 137:326082
TITLE: Microbial preparation of polyhydroxyalkanoates for charge control agents and binders for toners
INVENTOR(S): Kenmoku, Takashi; Kobayashi, Toyoko; Sugawa, Etsuko; Yano, Tetsuya ; Kobayashi, Shin; Imamura, Takeshi; Honma, Tsutomu
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
SOURCE: Eur. Pat. Appl., 83 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1253161	A2	20021030	EP 2002-9667	2002

0429
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EP 1253161 A3 20030226
EP 1253161 B1 20060322
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
JP 2003034717 A 20030207 JP 2002-127588
2002
0426
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JP 3848206 B2 20061122
US 2003104300 A1 20030605 US 2002-133576
2002
0429
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US 6908720 B2 20050621
PRIORITY APPLN. INFO.: JP 2001-133651 A
2001
0427
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JP 2001-133667 A
2001
0427
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ED Entered STN: 01 Nov 2002
AB The present invention provides a polyhydroxyalkanoate (PHA) having a unit containing thioether with high reactivity, and its production method. The present invention also provides a charge control agent containing the PHA; a toner binder containing the charge control agent; an electrostatic latent image developing toner containing the charge control agent; and an image forming method and an image forming apparatus using the electrostatic latent image developing toner.

L63 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:831840 HCAPLUS Full-text
DOCUMENT NUMBER: 137:338415
TITLE: Preparation of microbial polyhydroxyalkanoates and their use in toners
INVENTOR(S): Honma, Tsutomo; **Yano, Tetsuya**; Nomoto, Tsuyoshi; **Kozaki, Shinya**
PATENT ASSIGNEE(S): **Canon Kabushiki** Kaisha, Japan
SOURCE: Eur. Pat. Appl., 60 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1253160	A2	20021030	EP 2002-9695	2002 0429
EP 1253160	A3	20031022		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003011312	A	20030115	JP 2001-208704	2001 0710
JP 3684175	B2	20050817		
PRIORITY APPLN. INFO.:			JP 2001-131694 A	2001 0427
			JP 2001-208704 A	2001 0710

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ED Entered STN: 01 Nov 2002
AB A construct comprises a base material and a polyhydroxyalkanoate, wherein at least a part of the base material is coated with the polyhyroxyalkanoate, and the polyhydroxyalkanoate comprises a 3-hydroxyalkanoic acid unit other than 3-hydroxypropionic acid unit, 3-hydroxy-n-butyric acid unit, and 3-hydroxy-n-valeric acid unit. A method for making a construct comprises: immobilizing a medium chain length

polyhydroxyalkanoate synthetase to a base material, and reacting 3-hydroxyacyl CoA with the synthetase to synthesize a polyhydroxyalkanoate and to coat at least a part of the base material with the polyhdroxyalkanoate. Polyhydroxyalkanoate synthetase was isolated from a transformant having polyhydroxyalkanoate synthetase production capacity, immobilized on alumina, and incubated with (R)-3-hydroxyoctanoyl CoA to give a polyhydroxyalkanoate.

L63 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:752333 HCAPLUS Full-text
DOCUMENT NUMBER: 137:263769
TITLE: Thienyl-containing polyhydroxyalkanoates prepared by microbial polymerization, and use in charge control agents, toner binders and image-forming apparatus
INVENTOR(S): **Yano, Tetsuya; Sugawa, Etsuko; Imamura, Takeshi; Honma, Tsutomu; Kenmoku, Takashi**
PATENT ASSIGNEE(S): **Canon Kabushiki** Kaisha, Japan
SOURCE: Eur. Pat. Appl., 83 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1245605	A2	20021002	EP 2002-7025	2002 0327
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EP 1245605	A3	20030402		
EP 1245605	B1	20070314		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2003096182	A1	20030522	US 2002-105305	2002 0326
			<--	
US 6777153	B2	20040817		
JP 2003012786	A	20030115	JP 2002-89658	2002 0327
			<--	
JP 3745298	B2	20060215		
PRIORITY APPLN. INFO.:			JP 2001-90026 A	2001 0327
			<--	
			JP 2001-133551 A	2001 0427
			<--	

ED Entered STN: 04 Oct 2002
AB The title polyhydroxyalkanoate comprise units represented by OCHRCH2CO, where R is (CH2)nCOR1, R1 is 2-thienyl, and n is 1 to 8. Also disclosed are a process for producing the polyhydroxyalkanoate by the use of a microorganism having the ability to produce the polyhydroxyalkanoate and accumulate it in the bacterial body; a charge control agent, a toner binder and a toner which contain this polyhydroxyalkanoate; and an image-forming method and an image-forming apparatus which make use of the toner.

L63 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:671943 HCAPLUS Full-text
DOCUMENT NUMBER: 137:224074
TITLE: Novel polyhydroxyalkanoate containing unit phenylsulfanyl structure in the side chain, process for its production, charge control agent, toner binder and toner which contain novel polyhydroxyalkanoate, and image-forming apparatus which make use of the toner
INVENTOR(S): **Imamura, Takeshi; Sugawa, Etsuko; Yano, Tetsuya**; Nomoto, Tsuyoshi; Suzuki, Tomohiro; **Honma,**

Tsutomu; Kenmoku, Takashi; Fukui, Tatsuki
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
SOURCE: Eur. Pat. Appl., 133 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1236755	A2	20020904	EP 2002-4759	2002 0301
EP 1236755	A3	20030402		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2003013841	A1	20030116	US 2002-84172	2002 0228
US 7045321	B2	20060516		
JP 2003306534	A	20031031	JP 2002-56654	2002 0301
JP 3592306	B2	20041124		
US 2005250191	A1	20051110	US 2005-155599	2005 0620

PRIORITY APPLN. INFO.: JP 2001-57142 A 2001 0301
JP 2001-57145 A 2001 0301
JP 2001-164774 A 2001 0531
JP 2001-210037 A 2001 0710
JP 2001-210049 A 2001 0710
JP 2002-39254 A 2002 0215
US 2002-84172 A3 2002 0228

ED Entered STN: 06 Sep 2002

AB A polyhydroxyalkanoate is disclosed which has, in the mol., a unit represented by OCH[(CH2)xSC6H4R]CH2CO, wherein R is arbitrarily selected from a hydrogen atom, a halogen atom, CN, NO2, COOR', SO2R" CH3, C2H5, C3H7, C(CH3)2H and C(CH3)3; where R' is H, Na, K, CH3 or C2H5, and R" is OH, ONa, OK, a halogen atom, OCH3 or OC2H5; and x is an integer arbitrarily selected from 1 to 8; with the proviso that a polyhydroxyalkanoate is excluded which has a hydrogen atom as R and x in all the units is 2 or 4. Also disclosed is a process for producing the polyhydroxyalkanoate by the use of a microorganism having the ability to produce the polyhydroxyalkanoate and accumulate it in the bacterial body. This polyhydroxyalkanoate is useful as a biodegradable charge-control agent in electrophotog. toner binders. A typical polymer was manufactured by inoculating 200 mL Na2HPO4 6.2, K2HPO4 3.0, NaCl 0.5, and NH4Cl 1 g/L containing 0.5% polypeptone, 0.1% 5-(phenylthio)valeric acid with Pseudomonas cichorii strain YN2, and shaking 30 h.

L63 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:892025 HCAPLUS Full-text
DOCUMENT NUMBER: 136:19159
TITLE: Separation of poly(hydroxyalkanoic acids) from microbial cells
INVENTOR(S): **Imamura, Takeshi; Kenmoku, Takashi**; Suzuki, Tomohiro; **Honma, Tsutomu**; Nomoto, Takeshi; **Sugawa, Etsuko; Yano, Tetsuya**
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001340095	A	20011211	JP 2001-67254	2001 0309

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PRIORITY APPLN. INFO.: JP 2000-88715 A 2000 0328

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ED Entered STN: 11 Dec 2001
AB The polymers are separated from cells by microwave irradiation Ralstonia eutropha TB 64 was cultured in a medium containing Na pyruvate to give cells containing poly(3-hydroxybutyric acid) (I), which was treated in a microwave oven, freeze-dried, extracted with CHCl3, and washed with MeOH to give I with 87.1% purity and 85.9% recovery.

L63 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:616368 HCAPLUS Full-text
DOCUMENT NUMBER: 133:206898
TITLE: Core-shell or multilayered polymer particles and their in situ manufacture with microorganisms
INVENTOR(S): Kawahata, Yuji; **Imamura, Takeshi**
PATENT ASSIGNEE(S): Canon Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000236892	A	20000905	JP 1999-39955	1999 0218

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PRIORITY APPLN. INFO.: JP 1999-39955 1999 0218

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ED Entered STN: 06 Sep 2000
AB The particles, which might be useful for sustained-release pharmaceuticals, are manufactured by cultivation of microorganisms capable of producing polymer particles in the cells, in media containing materials for the polymers with changing the concns. and/or components of the materials. Burkholderia cepacia KK01 strain (FERM BP-4235) was cultured in a medium containing Na pyruvate, centrifuged, cultured in another medium containing Na valerate, centrifuged to collect the microorganism, and treated with NaOCl to manufacture perfectly spherical particles consisted of poly(3-hydroxybutyric acid) as the core and poly(3-hydroxyvaleric acid) as the shell.

L63 ANSWER 21 OF 27 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2003:68616 BIOSIS Full-text
DOCUMENT NUMBER: PREV200300068616
TITLE: Method for producing microbial polyester.
AUTHOR(S): **Imamura, Takeshi** [Inventor, Reprint

Author]; **Yano, Tetsuya** [Inventor];
Kobayashi, Shin [Inventor]; Suda, Sakae [Inventor];
Honma, Tsutomu [Inventor]
CORPORATE SOURCE: Chigasaki, Japan
ASSIGNEE: **Canon Kabushiki**
Kaisha, Tokyo, Japan
PATENT INFORMATION: US 6492147 20021210
SOURCE: Official Gazette of the United States Patent and
Trademark Office Patents, (**Dec 10 2002**)
Vol. 1265, No. 2. http://www.uspto.gov/web/menu/pat
data.html. e-file.
ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 29 Jan 2003
Last Updated on STN: 29 Jan 2003
ED Entered STN: 29 Jan 2003
Last Updated on STN: 29 Jan 2003
AB A method for producing a microbial polyester by culturing a microorganism being capable of producing a **poly hydroxyalkanoate** polyester in a culture medium containing 1-hexene as a sole carbon source.

L63 ANSWER 22 OF 27 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2003:55194 BIOSIS Full-text
DOCUMENT NUMBER: PREV200300055194
TITLE: **Polyhydroxyalkanoate** synthase and gene
encoding the same enzyme.
AUTHOR(S): **Yano, Tetsuya** [Inventor, Reprint Author];
Imamura, Takeshi [Inventor]; Suda, Sakae
[Inventor]; **Honma, Tsutomu** [Inventor]
CORPORATE SOURCE: Atsugi, Japan
ASSIGNEE: **Canon Kabushiki**
Kaisha, Tokyo, Japan
PATENT INFORMATION: US 6485951 20021126
SOURCE: Official Gazette of the United States Patent and
Trademark Office Patents, (**Nov 26 2002**)
Vol. 1264, No. 4. http://www.uspto.gov/web/menu/pat
data.html. e-file.
ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 22 Jan 2003
Last Updated on STN: 22 Jan 2003
ED Entered STN: 22 Jan 2003
Last Updated on STN: 22 Jan 2003
AB A novel **polyhydroxyalkanoate** (PHA) synthase derived from a microorganism capable of producing a PHA having a novel side-chain structure and a DNA encoding the amino acid sequence for the synthase are provided. Two PHA synthase proteins (SEQ ID Nos. 1 and 3) derived from **Pseudomonas** jessenii P161 (FERM BP-7376) and PHA synthase genes encoding these PHA synthases are provided, respectively (SEQ ID Nos. 2 and 4). A recombinant microorganism is endowed with a PHA producing ability.

L63 ANSWER 23 OF 27 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2003:53351 BIOSIS Full-text
DOCUMENT NUMBER: PREV200300053351
TITLE: **Polyhydroxyalkanoate** containing
3-hydroxythienylalkanoic acid as monomer unit and
method for producing the same.
AUTHOR(S): **Honma, Tsutomu** [Inventor, Reprint
Author]; **Yano, Tetsuya** [Inventor];
Kobayashi, Shin [Inventor]; **Imamura,**
Takeshi [Inventor]; **Kenmoku, Takashi**
[Inventor]; **Kozaki, Shinya** [Inventor]
CORPORATE SOURCE: Atsugi, Japan
ASSIGNEE: **Canon Kabushiki**
Kaisha, Tokyo, Japan
PATENT INFORMATION: US 6479621 20021112
SOURCE: Official Gazette of the United States Patent and
Trademark Office Patents, (**Nov 12 2002**)
Vol. 1264, No. 2. http://www.uspto.gov/web/menu/pat
data.html. e-file.
ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent

LANGUAGE: English
ENTRY DATE: Entered STN: 22 Jan 2003
Last Updated on STN: 22 Jan 2003
ED Entered STN: 22 Jan 2003
Last Updated on STN: 22 Jan 2003
AB Microorganisms capable of synthesizing novel **polyhydroxyalkanoate** having 3-hydroxythienylalkanoic acid as monomer unit, using thienylalkanoic acid as a stock are cultured on a culture medium containing thienylalkanoic acid, and the **polyhydroxyalkanoate** produced in the cultured cell is extracted and

L63 ANSWER 24 OF 27 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:192930 BIOSIS Full-text
DOCUMENT NUMBER: PREV200100192930
TITLE: **Pseudomonas** cepacia strain isolated from termite intestines that degrades trichlorethylene and furan compounds.
AUTHOR(S): Kato, Kiny [Inventor, Reprint author]; **Kozaki, Shinya** [Inventor]; **Imamura, Takeshi** [Inventor]; Sakuranaga, Masanori [Inventor]
CORPORATE SOURCE: Atsugi, Japan
ASSIGNEE: **Canon Kabushiki** Kaisha, Tokyo, Japan
PATENT INFORMATION: US 6096530 20000801
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (**Aug. 1, 2000**)
Vol. 1237, No. 1. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Apr 2001
Last Updated on STN: 18 Feb 2002
ED Entered STN: 20 Apr 2001
Last Updated on STN: 18 Feb 2002
AB A biologically pure culture of **Pseudomonas** cepacia strain KK01 (FERM BP-4235) is capable of degrading trichloroethylene. A method for obtaining microorganisms having a trichloroethylene degrading ability comprises the steps of culturing microorganisms separated from the bodies of termites in a culture medium. A method for remediating a soil contaminated with trichloroethylene comprises the steps of providing a soil contaminated with trichloroethylene and bringing microorganisms having a trichloroethylene degrading ability derived from intestine of termites into contact with the soil, and biodegrading trichloroethylene in the soil. A method for biodegrading trichloroethylene, comprises the steps of culturing **Pseudomonas** cepacia KK01 (FERM BP-4235) under existence of an inducer and inducing **Pseudomonas** cepacia KK01 (FERM BP-4235) to have ability for degrading trichloroethylene and bringing **Pseudomonas** cepacia KK01 having trichloroethylene degrading ability to contact with trichloroethylene and biodegrading trichloroethylene.

L63 ANSWER 25 OF 27 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2000:331469 BIOSIS Full-text
DOCUMENT NUMBER: PREV200000331469
TITLE: Remedying a contaminated environment using **Pseudomonas** cepacia or Corynebacterium species and Renobacter species FERM BP-5353 having dehalogenase activity.
AUTHOR(S): **Imamura, Takeshi** [Inventor, Reprint author]; **Yano, Tetsuy** [Inventor]
CORPORATE SOURCE: Chigasaki, Japan
ASSIGNEE: **Canon Kabushiki** Kaisha, Tokyo, Japan
PATENT INFORMATION: US 6017746 20000125
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (**Jan. 25, 2000**)
Vol. 1230, No. 4. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 2 Aug 2000
Last Updated on STN: 7 Jan 2002
ED Entered STN: 2 Aug 2000
Last Updated on STN: 7 Jan 2002
AB A process for remedying an environment contaminated with an aliphatic organochlorine compound which includes the use of **Pseudomonas** cepacia strain KK01 (FERM BP-4235) or Corynebacterium species (FERM BP 5102) and Renobacter species (FERM BP-5353). The first two microorganisms are capable of introducing an oxygen atom into the aliphatic organochlorine compound in order to convert the aliphatic compound to an epoxide. During protonization the epoxide is converted into a chlorinated organic acid. Renobacter species strain FERM BP-5353 decomposes chlorinated organic acids to substances naturally existing in nature. The chlorinated and/or halogenated acids include chloroacetic

acid, dichloroacetic acid, trichloroacetic acid and dichloropropionic acid, etc. The polluted environments in which the processes may be carried out include the soil, ground water and waste water.

L63 ANSWER 26 OF 27 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:83352 BIOSIS Full-text
DOCUMENT NUMBER: PREV200200083352
TITLE: Bacterial KB2.
AUTHOR(S): **Imamura, T.** [Inventor]; **Yano, T.** [Inventor]
CORPORATE SOURCE: Chigasaki, Japan
ASSIGNEE: **CANON KABUSHIKI** KAISHA
PATENT INFORMATION: US 5665597 19970909
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (**Sept. 9, 1997**)
Vol. 1202, No. 2, pp. 1328. print.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 16 Jan 2002
Last Updated on STN: 25 Feb 2002
ED Entered STN: 16 Jan 2002
Last Updated on STN: 25 Feb 2002

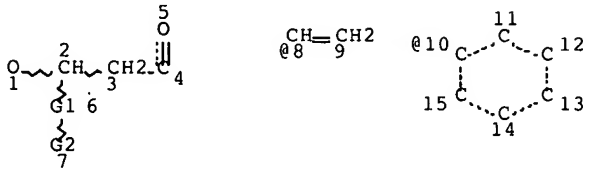
L63 ANSWER 27 OF 27 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:82147 BIOSIS Full-text
DOCUMENT NUMBER: PREV200200082147
TITLE: Method for biodegradation of polluting substance.
AUTHOR(S): Kato, K. [Inventor]; Tanaka, K. [Inventor]; Sakuranaga, M. [Inventor]; **Kozaki, S.** [Inventor]
CORPORATE SOURCE: Yokohama, Japan
ASSIGNEE: **CANON KABUSHIKI** KAISHA
PATENT INFORMATION: US 5658795 19970819
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (**Aug. 19, 1997**)
Vol. 1201, No. 3, pp. 2099. print.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 16 Jan 2002
Last Updated on STN: 25 Feb 2002
ED Entered STN: 16 Jan 2002
Last Updated on STN: 25 Feb 2002

STRUCTURE SEARCH

=> d his l52

(FILE 'HCAPLUS' ENTERED AT 11:04:52 ON 30 AUG 2007)
L52 11 S L50 NOT L47

=> d que stat l52
L4 STR



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VAR G2=8/10
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CONNECT IS E1 RC AT 5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L6 1299 SEA FILE=REGISTRY SSS FUL L4
L12 949 SEA FILE=HCAPLUS ABB=ON PLU=ON L6
L14 57652 SEA FILE=HCAPLUS ABB=ON PLU=ON PSEUDOMONAS+PFT,OLD,NT /CT
L15 91 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 AND L14
L16 QUE ABB=ON PLU=ON PSEUDOMONAS?
L17 QUE ABB=ON PLU=ON POLYHYDROXYALKANOATE OR POLY(W)HYDROXYALKANOATE OR POLY(W)HYDROXY(W)ALKANOATE
L18 QUE ABB=ON PLU=ON COPOLYM? OR CO(W)POLYM?
L19 QUE ABB=ON PLU=ON L17(3A)L18
L20 99 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 AND L16
L21 99 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 OR L20
L22 2313 SEA FILE=HCAPLUS ABB=ON PLU=ON POLYHYDROXYALKANOATE OR POLY(W)HYDROXYALKANOATE OR POLY(W)HYDROXY(W)ALKANOATE
L23 78 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 AND L22
L24 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 AND L19
L26 763 SEA FILE=HCAPLUS ABB=ON PLU=ON ("FUKUI, TATSUKI"/AU OR "HONMA, TSUTOMU"/AU OR "IMAMURA, TAKESHI"/AU OR "KENMOKU, TAKASHI"/AU OR "KOZAKI, SHINYA"/AU OR "MIHARA, CHIEKO"/AU OR "YANO, TETSUYA"/AU)
L27 QUE ABB=ON PLU=ON SUGAWA E?/AU
L28 786 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 OR L26
L29 QUE ABB=ON PLU=ON FUKUI T?/AU
L30 QUE ABB=ON PLU=ON HOMA T?/AU
L31 QUE ABB=ON PLU=ON IMAMURA T?/AU
L32 QUE ABB=ON PLU=ON KENMOKU T?/AU
L33 QUE ABB=ON PLU=ON KOZAKI S?/AU
L34 QUE ABB=ON PLU=ON MIHARA C?/AU
L35 QUE ABB=ON PLU=ON YANO T?/AU
L38 QUE ABB=ON PLU=ON (CANON(W)KABUSHIKI?)/PA,CS,SO,CO
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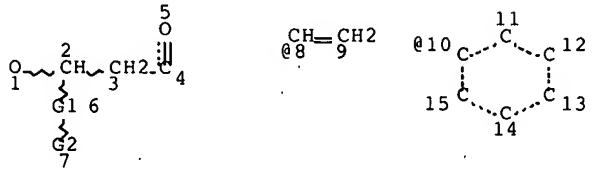
L43 119 SEA FILE=HCAPLUS ABB=ON PLU=ON (L42 OR L28) AND L16
L45 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L43 AND L18
L46 QUE ABB=ON PLU=ON PY<2003 OR PRY<2003 OR AY<2003 OR MY<2003 OR REVIEW/DT
L47 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L45 AND L46
L48 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L23 AND L18
L49 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L48 OR L24

L50 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L49 AND L46
L52 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L50 NOT L47

=> d his l62

(FILE 'MEDLINE, BIOSIS, DRUGU, EMBASE' ENTERED AT 11:14:08 ON 30 AUG 2007)
L62 4 S L56 NOT L61

=> d que stat l62
L4 STR



REP G1=(1-8) CH2
VAR G2=8/10
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L6 1299 SEA FILE=REGISTRY SSS FUL L4
L10 20 SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND (MEDLINE/LC OR BIOSIS/LC OR DRUGU/LC OR EMBASE/LC)
L16 QUE ABB=ON PLU=ON PSEUDOMONAS?
L17 QUE ABB=ON PLU=ON POLYHYDROXYALKANOATE OR POLY(W)HYDROXYALKANOATE OR POLY(W)HYDROXY(W)ALKANOATE
L26 763 SEA FILE=HCAPLUS ABB=ON PLU=ON ("FUKUI, TATSUKI"/AU OR "HONMA, TSUTOMU"/AU OR "IMAMURA, TAKESHI"/AU OR "KENMOKU, TAKASHI"/AU OR "KOZAKI, SHINYA"/AU OR "MIHARA, CHIEKO"/AU OR "YANO, TETSUYA"/AU)
L27 QUE ABB=ON PLU=ON SUGAWA E?/AU
L28 786 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 OR L26
L29 QUE ABB=ON PLU=ON FUKUI T?/AU
L30 QUE ABB=ON PLU=ON HOMA T?/AU
L31 QUE ABB=ON PLU=ON IMAMURA T?/AU
L32 QUE ABB=ON PLU=ON KENMOKU T?/AU
L33 QUE ABB=ON PLU=ON KOZAKI S?/AU
L34 QUE ABB=ON PLU=ON MIHARA C?/AU
L35 QUE ABB=ON PLU=ON YANO T?/AU
L36 QUE ABB=ON PLU=ON L27 OR (L29 OR L30 OR L31 OR L32 OR L33 OR L34 OR L35)
L38 QUE ABB=ON PLU=ON (CANON(W)KABUSHIKI?)/PA,CS,SO,CO
L46 QUE ABB=ON PLU=ON PY<2003 OR PRY<2003 OR AY<2003 OR MY<2003 OR REVIEW/DT
L53 67 SEA L10
L54 3 SEA L53 AND L16
L55 2 SEA L53 AND L17
L56 4 SEA L54 OR L55
L57 255 SEA L28
L58 10077 SEA L36 OR L57
L59 60 SEA L58 AND L38
L60 34 SEA L59 AND (L16 OR L17)
L61 7 SEA L60 AND L46
L62 4 SEA L56 NOT L61

=> dup rem l52 l62
FILE 'HCAPLUS' ENTERED AT 11:23:35 ON 30 AUG 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE 'MEDLINE' ENTERED AT 11:23:35 ON 30 AUG 2007

FILE 'BIOSIS' ENTERED AT 11:23:35 ON 30 AUG 2007

PROCESSING COMPLETED FOR L52
PROCESSING COMPLETED FOR L62
L64 15 DUP REM L52 L62 (0 DUPLICATES REMOVED)
ANSWERS '1-11' FROM FILE HCAPLUS
ANSWER '12' FROM FILE MEDLINE
ANSWERS '13-15' FROM FILE BIOSIS

STRUCTURE SEARCH RESULTS

=> d l64 1-11 ibib ed abs hitstr hitind

L64 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:912506 HCAPLUS Full-text
DOCUMENT NUMBER: 136:200571
TITLE: Preparation and Characterization of Enantiomerically Pure Telechelic Diols from mcl-Poly[(R)-3-hydroxyalkanoates]
AUTHOR(S): Andrade, Austin P.; Witholt, Bernard; Hany, Roland; Egli, Thomas; Li, Zhi
CORPORATE SOURCE: Institute of Biotechnology, ETH-Zuerich, Honggerberg, Zurich, CH-8093, Switz.
SOURCE: Macromolecules (2002), 35(3), 684-689
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 19 Dec 2001
AB Novel enantiomerically pure telechelic OH-terminated poly[(R)-3-hydroxyoctanoate] (PHO-diol), poly[(R)-3- hydroxyoctanoate-co-poly[(R)-3-hydroxy-7-oxooctanoate] (PHOO-diol), and poly[(R)-3-hydroxyoctanoate-co-poly[(R)-3-hydroxy- 7-octenoate] (PHUO-diol) have been synthesized in 80-91% yield from the corresponding high mol. weight polymers, resp., by catalytic transesterification with ethylene glycol. The number average mol. wts. (Mn) of these telechelic diols reached (2.0-3.0) + 103, which corresponds to 17-20 repeated monomer units. For PHOO-diol and PHUO-diol, the side chain functional groups remained, which provides with addnl. reactive groups for further polymerization or modification. The structures of the diols were confirmed by 1H NMR and IR spectra. The glass transition temps. (Tg) of the telechelic diols are between -46 and -56 °C and the melting transition temps. (Tm) are lower than 40 °C, all determined by DSC. These telechelic diols can be used as soft-segments to prepare novel block copolymers with desired properties.
IT **401495-09-8**, (R)-3-Hydroxyhexanoate-(R)-3-hydroxyoctanoate-(R)-3-Hydroxy-5-hexenoate-(R)-3-hydroxy-7-octenoate copolymer, ester with ethylene glycol (1:1)
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and characterization of enantiomerically pure telechelic diols from medium chain length-poly[(R)-3-hydroxyalkanoates])
RN 401495-09-8 HCAPLUS
CN 7-Octenoic acid, 3-hydroxy-, (3R)-, polymer with (3R)-3-hydroxyhexanoic acid, (3R)-3-hydroxy-5-hexenoic acid and (3R)-3-hydroxyoctanoic acid, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 107-21-1
CMF C2 H6 O2

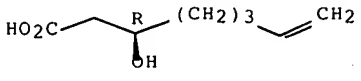
CM 2

CRN 128971-78-8
CMF (C8 H16 O3 . C8 H14 O3 . C6 H12 O3 . C6 H10 O3)x
CCI PMS

CM 3

CRN 119003-50-8
CMF C8 H14 O3

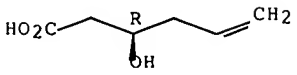
Absolute stereochemistry.



CM 4

CRN 119003-49-5
CMF C6 H10 O3

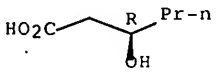
Absolute stereochemistry.



CM 5

CRN 77877-35-1
CMF C6 H12 O3

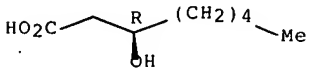
Absolute stereochemistry. Rotation (-).



CM 6

CRN 44987-72-6
CMF C8 H16 O3

Absolute stereochemistry.



CC 35-8 (Chemistry of Synthetic High Polymers)
ST transesterification ethylene glycol telechelic enantiomerically pure **polyhydroxyalkanoate** diol synthesis
IT **Pseudomonas putida**
(GPo1; preparation and characterization of enantiomerically pure telechelic diols from medium chain length-poly[(R)-3-hydroxyalkanoates])
IT 107-21-1, Ethylene glycol, reactions 401495-04-3, (R)-3-Hydroxyhexanoate-(R)-3-hydroxyoctanoate **copolymer**, ester with ethylene glycol (1:1) 401495-06-5, (R)-3-Hydroxyhexanoate-(R)-3-hydroxyoctanoate-(R)-3-Hydroxy-5-oxohexanoate-(R)-3-hydroxy-7-oxooctanoate **copolymer**, ester with ethylene glycol (1:1) **401495-09-8**, (R)-3-Hydroxyhexanoate-(R)-3-hydroxyoctanoate-(R)-3-Hydroxy-5-hexenoate-(R)-3-hydroxy-7-octenoate **copolymer**, ester with ethylene glycol (1:1)
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and characterization of enantiomerically pure telechelic diols from medium chain length-poly[(R)-3-hydroxyalkanoates])
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L64 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:921063 HCAPLUS Full-text
DOCUMENT NUMBER: 136:231306
TITLE: Genetically engineered **Pseudomonas**: A factory of new bioplastics with broad applications
AUTHOR(S): Olivera, Elias R.; Carnicero, David; Jodra, Ruth; Minambres, Baltasar; Garcia, Belen; Abraham, Gustavo A.; Gallardo, Alberto; San Roman, Julio; Garcia, Jose L.; Naharro, German; Luengo, Jose M.
CORPORATE SOURCE: Departamento de Bioquimica y Biologia Molecular, Facultad de Veterinaria, Universidad de Leon, Leon, 24007, Spain
SOURCE: Environmental Microbiology (2001), 3(10), 612-618
CODEN: ENMIFM; ISSN: 1462-2912
PUBLISHER: Blackwell Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:231306
ED Entered STN: 21 Dec 2001

AB New bioplastics containing aromatic or mixts. of aliphatic and aromatic monomers have been obtained using genetically engineered strains of **Pseudomonas** putida. The mutation (-) or deletion (Δ) of some of the genes involved in the β-oxidation pathway (fadA-, fadB- ΔfadA or ΔfadBA mutants) elicits a strong intracellular accumulation of unusual homo-or co -polymers that dramatically alter the morphol. of these bacteria, as more than 90% of the cytoplasm is occupied by these macromols. The introduction of a blockade in the β-oxidation pathway, or in other related catabolic routes, has allowed the synthesis of polymers other than those accumulated in the wild type (with regard to both monomer size and relative percentage), the accumulation of certain intermediates that are rapidly catabolized in the wild type and the accumulation in the culture broths of end metabolites that, as in the case of phenylacetic acid, phenylbutyric acid, trans-cinnamic acid or their derivs., have important medical or pharmaceutical applications (antitumoral, analgesic, radiopotentiators, chemopreventive or antihelmintic). Furthermore, using one of these polyesters (poly 3-hydroxy-6-phenylhexanoate), we obtained polymeric microspheres that could be used as drug vehicles.

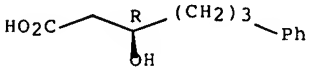
IT **247169-46-6P 402956-11-0P 402956-12-1P 402956-13-2P 402956-14-3P 402956-15-4P 402956-16-5P**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(bioplastic production with genetically engineered **Pseudomonas**)

RN 247169-46-6 HCAPLUS
CN Benzenehexanoic acid, β-hydroxy-, (βR)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 247169-45-5
CMF C12 H16 O3

Absolute stereochemistry.

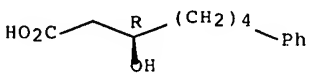


RN 402956-11-0 HCAPLUS
CN Benzeneheptanoic acid, β-hydroxy-, (βR)-, polymer with (βR)-β-hydroxybenzenepentanoic acid, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 247169-47-7
CMF C13 H18 O3

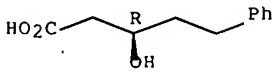
Absolute stereochemistry.



CM 2

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.

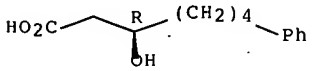


RN 402956-12-1 HCAPLUS
CN Benzeneheptanoic acid, β-hydroxy-, (βR)-, polymer with (βR)-β-hydroxybenzenehexanoic acid and (βR)-β-hydroxybenzenepentanoic acid, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 247169-47-7
CMF C13 H18 O3

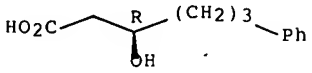
Absolute stereochemistry.



CM 2

CRN 247169-45-5
CMF C12 H16 O3

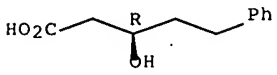
Absolute stereochemistry.



CM 3

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.



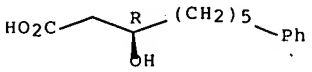
RN 402956-13-2 HCAPLUS
CN Benzeneoctanoic acid, β-hydroxy-, (βR)-, polymer with

(βR)-β-hydroxybenzenehexanoic acid, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 247169-51-3
CMF C14 H20 O3

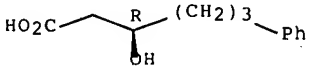
Absolute stereochemistry.



CM 2

CRN 247169-45-5
CMF C12 H16 O3

Absolute stereochemistry.

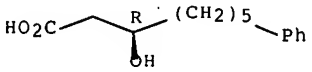


RN 402956-14-3 HCAPLUS
CN Benzeneoctanoic acid, β-hydroxy-, (βR)-, polymer with (βR)-β-hydroxybenzeneheptanoic acid, (βR)-β-hydroxybenzenehexanoic acid and (βR)-β-hydroxybenzenepentanoic acid, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 247169-51-3
CMF C14 H20 O3

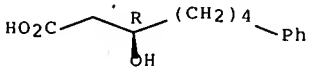
Absolute stereochemistry.



CM 2

CRN 247169-47-7
CMF C13 H18 O3

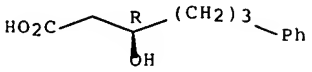
Absolute stereochemistry.



CM 3

CRN 247169-45-5
CMF C12 H16 O3

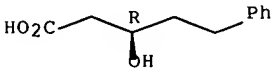
Absolute stereochemistry.



CM 4

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.

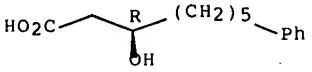


RN 402956-15-4 HCAPLUS
CN Benzeneoctanoic acid, β-hydroxy-, (βR)-, polymer with (βR)-β-hydroxybenzenehexanoic acid, (3R)-3-hydroxyhexanoic acid and (3R)-3-hydroxyoctanoic acid, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 247169-51-3
CMF C14 H20 O3

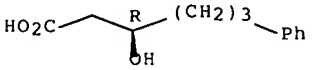
Absolute stereochemistry.



CM 2

CRN 247169-45-5
CMF C12 H16 O3

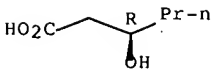
Absolute stereochemistry.



CM 3

CRN 77877-35-1
CMF C6 H12 O3

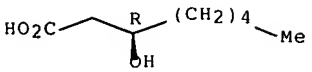
Absolute stereochemistry. Rotation (-).



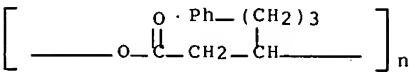
CM 4

CRN 44987-72-6
CMF C8 H16 O3

Absolute stereochemistry.

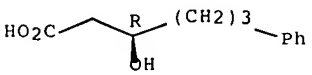


RN 402956-16-5 HCAPLUS
CN Poly[oxy[(3R)-1-oxo-3-(3-phenylpropyl)-1,3-propanediyl]] (9CI) (CA INDEX NAME)



IT **247169-45-5**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(bioplastic production with genetically engineered **Pseudomonas**)
RN 247169-45-5 HCAPLUS
CN Benzenehexanoic acid, β-hydroxy-, (βR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



CC 16-4 (Fermentation and Bioindustrial Chemistry)
ST **Pseudomonas** fermn **polyhydroxyalkanoate** prodn
IT Fermentation
Genetic engineering
Glass transition temperature
Microspheres
Polydispersity
Pseudomonas putida
(bioplastic production with genetically engineered **Pseudomonas**)
IT Gene, microbial
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(fadB; bioplastic production with genetically engineered **Pseudomonas**)
IT Gene, microbial
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(fadD; bioplastic production with genetically engineered **Pseudomonas**)

IT Polyesters, preparation
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(hydroxycarboxylic acid-based; bioplastic production with genetically engineered **Pseudomonas**)
IT Mutagenesis
(transposon; bioplastic production with genetically engineered **Pseudomonas**)
IT 124-07-2, Octanoic acid, processes 142-62-1, Hexanoic acid, processes 156-38-7, 4-Hydroxy-phenylacetic acid 2270-20-4, 5-Phenylvaleric acid 5581-75-9, 6-Phenylhexanoic acid 26547-51-3, 8-Phenyloctanoic acid 40228-90-8, 7-Phenylheptanoic acid
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(bioplastic production with genetically engineered **Pseudomonas**)
IT **247169-46-6P 402956-11-0P 402956-12-1P 402956-13-2P 402956-14-3P 402956-15-4P 402956-16-5P**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(bioplastic production with genetically engineered **Pseudomonas**)
IT **247169-45-5**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(bioplastic production with genetically engineered **Pseudomonas**)
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

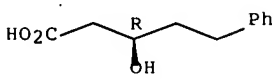
L64 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:180517 HCAPLUS Full-text
DOCUMENT NUMBER: 134:367300
TITLE: Microbial Synthesis of Poly(β-hydroxyalkanoates) Bearing Phenyl Groups from **Pseudomonas** putida: Chemical Structure and Characterization
AUTHOR(S): Abraham, Gustavo A.; Gallardo, Alberto; San Roman, Julio; Olivera, Elias R.; Jodra, Ruth; Garcia, Belen; Minambres, Baltasar; Garcia, Jose L.; Luengo, Jose M.
CORPORATE SOURCE: Instituto de Ciencia y Tecnologia de Polimeros, CSIC, Madrid, 28006, Spain
SOURCE: Biomacromolecules (2001), 2(2), 562-567
CODEN: BOMAF6; ISSN: 1525-7797
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 16 Mar 2001
AB New poly(β-hydroxyalkanoates) having aroms. groups (so-called PHPhAs) from a microbial origin have been characterized. These polymers were produced and accumulated as reserve materials when a β-oxidation mutant of **Pseudomonas** putida U, disrupted in the gene that encodes the 3-ketoacyl-CoA thiolase (fadA), was cultured in a chemical defined medium containing different aromatic fatty acids (6-phenylhexanoic acid, 7-phenylheptanoic acid, a mixture of them, or 8-phenyloctanoic acid) as carbon sources. The polymers were extracted from the bacteria, purified and characterized by using 13C NMR spectroscopy, gel permeation chromatog., and differential scanning calorimetry. Structural studies revealed that when 6-phenylhexanoic acid was added to the cultures, an homopolymer (poly-3-hydroxy-6-phenylhexanoate) was accumulated. The feeding with 8-phenyloctanoic acid and 7-phenylheptanoic acid leads to the formation of **copolymers** of the corresponding units with the n - 2 carbons formed after deacetylation, copoly(3-hydroxy-8- phenyloctanoate-3-hydroxy-6-phenylhexanoate) and copoly(3-hydroxy-7-phenylheptanoate-3-hydroxy-5-phenylvalerate), resp. The mixture of 6-phenylhexanoic acid and 7-phenylheptanoic acid gave rise to the corresponding terpolymer, copoly(3-hydroxy-7-phenylheptanoate-3-hydroxy-6-phenylhexanoate-3- hydroxy-5-phenylvalerate). Studies on the chemical structure of these three polyesters revealed that they were true **copolymers** but not a mixture of homopolymers and that the different monomeric units were randomly incorporated in the macromol. chains. Thermal behavior and mol. weight distribution were also discussed. These compds. had a dual attractive interest in function of (i) their broad use as biodegradable polymers and (ii) their possible biomedical applications.
IT **172923-04-5P 247169-52-4P 340255-66-5P 340255-71-2P 340255-73-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(microbial preparation of polyesters containing Ph group with **Pseudomonas** putida)
RN 172923-04-5 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-, (βR)-, homopolymer,

isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.

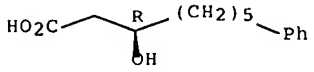


RN 247169-52-4 HCAPLUS
CN Benzeneoctanoic acid, β-hydroxy-, (βR)-, polymer with (βR)-β-hydroxybenzenehexanoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 247169-51-3
CMF C14 H20 O3

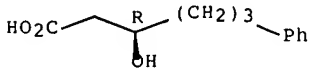
Absolute stereochemistry.



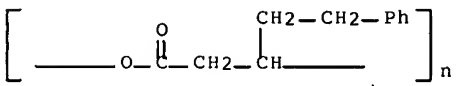
CM 2

CRN 247169-45-5
CMF C12 H16 O3

Absolute stereochemistry.



RN 340255-66-5 HCAPLUS
CN Poly[oxy[(3R)-1-oxo-3-(2-phenylethyl)-1,3-propanediyl]] (9CI) (CA INDEX NAME)



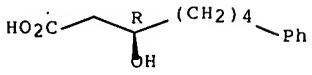
RN 340255-71-2 HCAPLUS
CN Benzeneheptanoic acid, β-hydroxy-, (βR)-, polymer with (βR)-β-hydroxybenzenepentanoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 247169-47-7

CMF C13 H18 O3

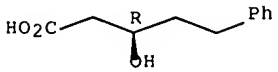
Absolute stereochemistry.



CM 2

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.

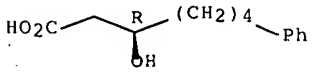


RN 340255-73-4 HCAPLUS
CN Benzeneheptanoic acid, β-hydroxy-, (βR)-, polymer with (βR)-β-hydroxybenzenehexanoic acid and (βR)-β-hydroxybenzenepentanoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 247169-47-7
CMF C13 H18 O3

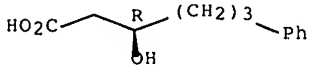
Absolute stereochemistry.



CM 2

CRN 247169-45-5
CMF C12 H16 O3

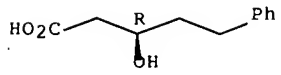
Absolute stereochemistry.



CM 3

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.

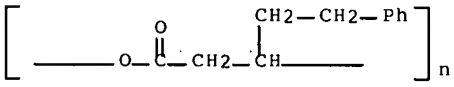


CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 10
ST microbial **polyhydroxyalkanoate** phenyl contg prepn characterization; **Pseudomonas** putida polyester prepn characterization; phenylhexanoic acid microbial polyester prepn; phenylheptanoic acid microbial polyester prepn; phenyloctanoic acid microbial polyester prepn
IT **Pseudomonas putida**
(in preparation of polyesters containing Ph group)
IT Polyesters, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(microbial preparation of polyesters containing Ph group with **Pseudomonas** putida)
IT **172923-04-5P 247169-52-4P 340255-66-5P 340255-71-2P 340255-73-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(microbial preparation of polyesters containing Ph group with **Pseudomonas** putida)
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L64 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:856979 HCAPLUS Full-text
DOCUMENT NUMBER: 136:196742
TITLE: Intracellular degradation of two structurally different polyhydroxyalkanoic acids accumulated in **Pseudomonas** putida and **Pseudomonas** citronellolis from mixtures of octanoic acid and 5-phenylvaleric acid
AUTHOR(S): Chung, Dong Min; Choi, Mun Hwan; Song, Jae Jun; Yoon, Sung Chul; Kang, Inn-Kyu; Huh, Nam Eung
CORPORATE SOURCE: Biomaterials Science Laboratory, Division of Applied Life Sciences at The Graduate School, Gyeongsang National University, Jinju, 660-701, S. Korea
SOURCE: International Journal of Biological Macromolecules (2001), 29(4-5), 243-250
CODEN: IJBMDR; ISSN: 0141-8130
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 27 Nov 2001
AB From a set of mixed carbon sources, 5-phenylvaleric acid (PV) and octanoic acid (OA), polyhydroxyalkanoic acid (PHA) was sep. accumulated in the two pseudomonads **Pseudomonas** putida BM01 and **Pseudomonas** citronellolis (ATCC 13674) to investigate any structural difference between the two PHA accumulated under a similar culture condition using one-step culture technique. The resulting polymers were isolated by chloroform solvent extraction and characterized by fractional precipitation and differential scanning calorimetry. The solvent fractionation anal. showed that the PHA synthesized by P. putida was separated into two fractions, 3-hydroxy-5-phenylvalerate (3HPV)-rich PHA fraction in the precipitate phase and 3-hydroxyoctanoate (3HO)-rich PHA fraction in the solution phase whereas the PHA produced by P. citronellolis exhibited a rather little compositional separation into the two phases. According to the thermal anal., the P. putida PHA exhibited two glass transitions indicative of the PHA not being homogeneous whereas the P. citronellolis PHA exhibited only one glass transition. It was found that the structural heterogeneity of the P. putida PHA was caused by a significant difference in the assimilation rate between PV and OA. The structural heterogeneity present in the P. putida PHA was also confirmed by a first order degradation kinetics anal. of the PHA in the cells. The two different first-order degradation rate consts. (k1), 0.087 and 0.015/h for 3HO- and 3HPV-unit, resp., were observed in a polymer system over the first 20 h of degradation In the later degradation period, the disappearance rate of 3HO-unit was calculated to be 0.020 h. The k1 value of 0.083/h, almost the same as for the 3HO-unit in the P. putida PHA, was obtained for the P(3HO) accumulated in P. putida BM01 grown on OA as the only carbon source. In addition, the k1 value of 0.015/h for the 3HPV-unit in the P. putida PHA, was also close to 0.019/h for the P(3HPV) homopolymer accumulated in P. putida BM01 grown on PV plus butyric acid. On the contrary, the k1 values for the P. citronellolis PHA were determined to be 0.035 and 0.029/h for 3HO- and 3HPV-unit, resp., thus these two relatively close values implying a random copolymer nature of the P. citronellolis PHA. In addition, the faster degradation of P(3HO) than P(3HPV) by the intracellular P. putida PHA depolymerase indicates that the enzyme is more specific against the aliphatic PHA than the aromatic PHA.
IT **129645-03-0P 134736-36-0P 401612-76-8P**
RL: BSU (Biological study, unclassified); PEP (Physical,

engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); PROC (Process)
(intracellular degradation of two structurally different polyhydroxyalkanoic acids accumulated in **Pseudomonas** putida and P. citronellolis from mixts. of octanoic acid and phenylvaleric acid)

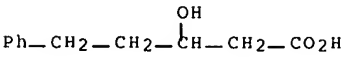
RN 129645-03-0 HCAPLUS
CN Poly[oxy[1-oxo-3-(2-phenylethyl)-1,3-propanediyl]] (9CI) (CA INDEX NAME)



RN 134736-36-0 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

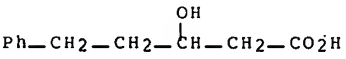
CRN 41479-99-6
CMF C11 H14 O3



RN 401612-76-8 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-, polymer with 3-hydroxyoctanoic acid (CA INDEX NAME)

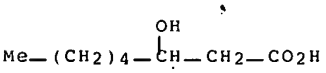
CM 1

CRN 41479-99-6
CMF C11 H14 O3



CM 2

CRN 14292-27-4
CMF C8 H16 O3



CC 10-2 (Microbial, Algal, and Fungal Biochemistry)
ST **polyhydroxyalkanoate** accumulation structure biodegrdn **Pseudomonas**; octanoate phenylvalerate **polyhydroxyalkanoate** accumulation **Pseudomonas**
IT Decomposition kinetics
(biodegrdn.; intracellular degradation of two structurally different polyhydroxyalkanoic acids accumulated in

Pseudomonas putida and P. citronellolis from mixts. of octanoic acid and phenylvaleric acid)

IT Carbon sources, microbial
Glass transition
Pseudomonas citronellolis
Pseudomonas putida
(intracellular degradation of two structurally different polyhydroxyalkanoic acids accumulated in **Pseudomonas** putida and P. citronellolis from mixts. of octanoic acid and phenylvaleric acid)

IT Polyesters, biological studies
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); PROC (Process)
(intracellular degradation of two structurally different polyhydroxyalkanoic acids accumulated in **Pseudomonas** putida and P. citronellolis from mixts. of octanoic acid and phenylvaleric acid)

IT 124-07-2, Octanoic acid, biological studies 2270-20-4, 5-Phenylvaleric acid 140208-16-8, **Polyhydroxyalkanoate** depolymerase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(intracellular degradation of two structurally different polyhydroxyalkanoic acids accumulated in **Pseudomonas** putida and P. citronellolis from mixts. of octanoic acid and phenylvaleric acid)

IT 86175-71-5P 120659-38-3P, Poly 3 hydroxyoctanoic acid **129645-03-0P 134736-36-0P 401612-76-8P**
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); PROC (Process)
(intracellular degradation of two structurally different polyhydroxyalkanoic acids accumulated in **Pseudomonas** putida and P. citronellolis from mixts. of octanoic acid and phenylvaleric acid)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L64 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:309693 HCAPLUS Full-text
DOCUMENT NUMBER: 133:57635
TITLE: PhaG-mediated synthesis of poly(3-hydroxyalkanoates) consisting of medium-chain-length constituents from nonrelated carbon sources in recombinant **Pseudomonas** fragi
AUTHOR(S): Fiedler, Silke; Steinbuchel, Alexander; Rehm, Bernd H. A.
CORPORATE SOURCE: Institut fur Mikrobiologie, Westfalische Wilhelms-Universitat Munster, Munster, D-48149, Germany
SOURCE: Applied and Environmental Microbiology (2000), 66(5), 2117-2124
CODEN: AEMIDF; ISSN: 0099-2240
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 14 May 2000

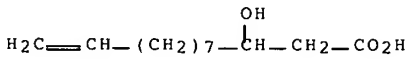
AB Recently, a new metabolic link between fatty acid de novo biosynthesis and biosynthesis of poly(3-hydroxyalkanoate) consisting of medium-chain-length constituents (C6 to C14) (PHAMCL), catalyzed by the 3-hydroxydecanoyl-[acyl-carrier- protein]:CoA transacylase (PhaG), has been identified in **Pseudomonas** putida. To establish this PHA-biosynthetic pathway in a non-PHA-accumulating bacterium, phaC1 (encoding PHA synthase 1) from **Pseudomonas** aeruginosa and phaG (encoding the transacylase) from P. putida were functionally coexpressed in **Pseudomonas** fragi. The recombinant strains of P. fragi were cultivated on gluconate as the sole carbon source, and PHA accumulation to about 14% of the total cellular dry weight was achieved. The resp. polyester was isolated, and GPC anal. revealed a weight average molar mass of about 130,000 g mol-1 and a polydispersity of 2.2. The PHA was composed mainly (60 mol%) of 3-hydroxydecanoate. These data strongly suggested that functional expression of phaC1 and phaG established a new pathway for PHAMCL biosynthesis from nonrelated carbon sources in P. fragi. When fatty acids were used as the carbon source, no PHA accumulation was observed in PHA synthase-expressing P. fragi, whereas application of the β-oxidation inhibitor acrylic acid mediated PHAMCL accumulation. The substrate for the PHA synthase PhaC1 is therefore presumably directly provided through the enzymic activity of the transacylase PhaG by the conversion of (R)-3-hydroxydecanoyl-ACP to (R)-3-hydroxydecanoyl-CoA when the organism is cultivated on gluconate. Here we demonstrate for the first time the establishment of PHAMCL synthesis from nonrelated carbon

sources in a non-PHA-accumulating bacterium, employing fatty acid de novo biosynthesis and the enzymes PhaG (a transacylase) and PhaC1 (a PHA synthase).

IT 278185-67-4DP, copolymer with **polyhydroxyalkanoates**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation)
(PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

RN 278185-67-4 HCAPLUS

CN 11-Dodecenoic acid, 3-hydroxy- (9CI) (CA INDEX NAME)



CC 16-4 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 3, 10

ST **Pseudomonas** recombinant prodn **polyhydroxyalkanoates** carbon sources

IT Genetic engineering
(PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT Gene, microbial
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(PhaG; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT Polyesters, biological studies
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation)
(hydroxycarboxylic acid-based; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT Promoter (genetic element)
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lacP; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT Plasmids
(pBHR86; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT Gene, microbial
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(phaC1; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT **Pseudomonas fragi**
(recombinant; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT Oxidation
(β-, pathway; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)

IT 79-10-7, Acrylic acid, biological studies
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study,

unclassified); BIOL (Biological study)
(PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)
IT 300-85-6DP, 3-Hydroxybutyric acid, **copolymer** with **polyhydroxyalkanoates** 1883-13-2DP, 3-Hydroxydodecanoic acid, **copolymer** with **polyhydroxyalkanoates** 1961-72-4DP, 3-Hydroxytetradecanoic acid, **copolymer** with **polyhydroxyalkanoates** 10191-24-9DP, 3-Hydroxyhexanoic acid, **copolymer** with **polyhydroxyalkanoates** 14292-26-3DP, 3-Hydroxydecanoic acid, **copolymer** with **polyhydroxyalkanoates** 14292-27-4DP, 3-Hydroxyoctanoic acid, **copolymer** with **polyhydroxyalkanoates** **278185-67-4DP**, **copolymer** with **polyhydroxyalkanoates**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation)
(PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)
IT 50-99-7, D-Glucose, biological studies 56-81-5, 1,2,3-Propanetriol, biological studies 77-92-9, biological studies 112-80-1, Oleic acid, biological studies 334-48-5, Decanoic acid 526-95-4, D-Gluconic acid 12125-02-9, Ammonium chloride, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)
IT 215314-08-2
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(PhaG; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)
IT 134688-88-3
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(phaC1; PhaG-mediated synthesis of medium chain length poly(3-hydroxyalkanoates) from nonrelated carbon sources in recombinant **Pseudomonas** fragi)
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

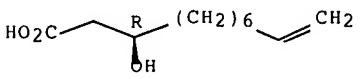
L64 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:112134 HCAPLUS Full-text
DOCUMENT NUMBER: 130:267855
TITLE: Chemical modification of **poly(hydroxyalkanoates)**. **Copolymers** bearing pendant sugars
AUTHOR(S): Constantin, Marieta; Simionescu, Cristofer I.; Carpov, Adrian; Samain, Eric; Driguez, Hugues
CORPORATE SOURCE: Centre Recherches Macromolecules Vegetales, Joseph Fourier Univ., Grenoble, F-38041, Fr.
SOURCE: Macromolecular Rapid Communications (1999), 20(2), 91-94
CODEN: MRCOE3; ISSN: 1022-1336
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 18 Feb 1999
AB **Copolymers** of poly(3-hydroxyoctanoates) (PHAs) containing repeating units with unsatd. or brominated pendant side chains were obtained from cultures of **Pseudomonas** oleovorans grown on mixts. of octanoic acid and undecenoic acid or 11-bromoundecanoic acid as carbon sources. These polymers, bearing reactive functionalities, were used to graft acetylated maltosyl units either by anti-Markovnikov addition to the double bond or SN2 substitution of the halogen. De-O-acetylation of the sugar moieties yielded PHAs with new properties.
IT **201933-09-7P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation);

PROC (Process)
(preparation and characterization of poly(3-hydroxyoctanoates) grafted with acetylated maltose derivs.)
RN 201933-09-7 HCAPLUS
CN 10-Undecenoic acid, 3-hydroxy-, (3R)-, polymer with (3R)-3-hydroxyoctanoic acid, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 198274-26-9
CMF C11 H20 O3

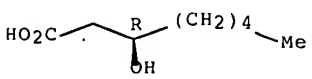
Absolute stereochemistry.



CM 2

CRN 44987-72-6
CMF C8 H16 O3

Absolute stereochemistry.

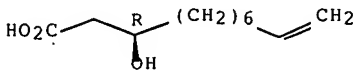


IT **201933-09-7DP**, reaction products with acetyl-1-thio-β-maltose
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and characterization of poly(3-hydroxyoctanoates) grafted with acetylated maltose derivs.)
RN 201933-09-7 HCAPLUS
CN 10-Undecenoic acid, 3-hydroxy-, (3R)-, polymer with (3R)-3-hydroxyoctanoic acid, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 198274-26-9
CMF C11 H20 O3

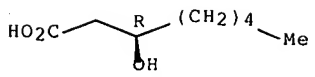
Absolute stereochemistry.



CM 2

CRN 44987-72-6
CMF C8 H16 O3

Absolute stereochemistry.



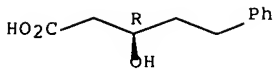
CC 35-8 (Chemistry of Synthetic High Polymers)
ST **polyhydroxyalkanoate** grafting acetylated maltose characterization
IT **201933-09-7P** 222043-80-3P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and characterization of poly(3-hydroxyoctanoates) grafted with acetylated maltose derivs.)
IT 2592-37-2DP, reaction products with hydroxyoctanoic acid-hydroxy-undecenoic acid **copolymer** 53270-66-9DP, reaction products with hydroxyoctanoic acid-bromo-hydroxyundecanoic acid **copolymer** **201933-09-7DP**, reaction products with acetyl-1-thio-β-maltose 222043-80-3DP, reaction products with acetyl-1-S-acetyl-thio-β-maltose
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and characterization of poly(3-hydroxyoctanoates) grafted with acetylated maltose derivs.)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L64 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:84591 HCAPLUS Full-text
DOCUMENT NUMBER: 124:115514
TITLE: Production of poly(3-hydroxyalkanoates) containing aromatic substituents by **Pseudomonas** oleovorans
AUTHOR(S): Curley, Joanne M.; Hazer, Baki; Lenz, Robert W.
CORPORATE SOURCE: Department of Polymer Science and Engineering, University of Massachusetts, Amherst, MA, 01003, USA
SOURCE: Macromolecules (**1996**), 29(5), 1762-6
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 09 Feb 1996
AB P. oleovorans was grown sep. on 5-(4'-tolyl)valeric acid, 5-(4'-ethylphenyl)valeric acid, 5-(4'-biphenyl)valeric acid, and 8-(4'-tolyl)octanoic acid either as the sole C source or as a cofeed with either nonanoic acid or 5-phenylvaleric acid. For polymer production, 5-(4'-tolyl)valeric acid was the most effective growth substrate of the 5. It resulted in the production of poly-3-hydroxy-5-(4'-tolyl)valerate, a crystalline polymer with a glass transition temperature of 18° and a melting transition of 95°. This poly(3-hydroxyalkanoate) (PHA) is apparently the 1st example of a crystalline aromatic-containing bacterial PHA. When P. oleovorans was cofed an equimolar mixture of 5-phenylvaleric acid and 5-(4'-tolyl)valeric acid, the polymer produced contained 36 mol% of 3-hydroxy-5-phenylvalerate and 64 mol% of 3-hydroxy-5-(4'-tolyl)valerate, and it did not crystallize.
IT **172923-04-5P** **172923-06-7P** **172923-07-8P** **172923-08-9P**
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(production of poly(3-hydroxyalkanoates) containing aromatic substituents by **Pseudomonas** oleovorans)
RN 172923-04-5 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-, (βR)-, homopolymer, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.

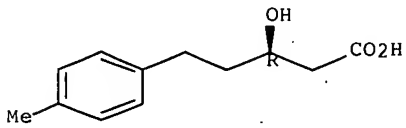


RN 172923-06-7 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-4-methyl-, (R)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 172923-05-6
CMF C12 H16 O3

Absolute stereochemistry.

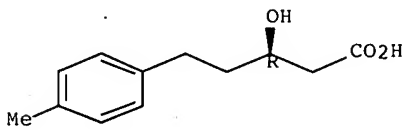


RN 172923-07-8 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-4-methyl-, (R)-, polymer with (R)-3-hydroxynonanoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 172923-05-6
CMF C12 H16 O3

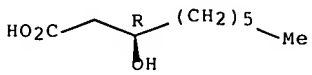
Absolute stereochemistry.



CM 2

CRN 33796-87-1
CMF C9 H18 O3

Absolute stereochemistry.

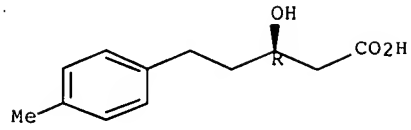


RN 172923-08-9 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-4-methyl-, (R)-, polymer with (R)-β-hydroxybenzenepentanoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 172923-05-6
CMF C12 H16 O3

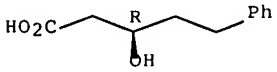
Absolute stereochemistry.



CM 2

CRN 153744-07-1
CMF C11 H14 O3

Absolute stereochemistry.



CC 16-4 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 35
ST arom **polyhydroxyalkanoate** prodn **Pseudomonas**; tolyl valerate phenylvalerate hydroxy **copolymer** **Pseudomonas**
IT **Pseudomonas oleovorans**
(production of poly(3-hydroxyalkanoates) containing aromatic substituents by **Pseudomonas** oleovorans)
IT Polyesters, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(hydroxycarboxylic acid-based, production of poly(3-hydroxyalkanoates) containing aromatic substituents by **Pseudomonas** oleovorans)
IT **172923-04-5P 172923-06-7P 172923-07-8P 172923-08-9P**
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(production of poly(3-hydroxyalkanoates) containing aromatic substituents by **Pseudomonas** oleovorans)
IT 777-93-5P 51994-31-1P, [1,1'-Biphenyl]-4-pentanoic acid 89326-69-2P, Benzenepentanoic acid, 4-ethyl- 101100-52-1P
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(production of poly(3-hydroxyalkanoates) containing aromatic substituents by **Pseudomonas** oleovorans)

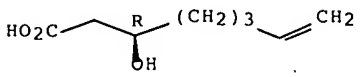
L64 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:120979 HCAPLUS Full-text
DOCUMENT NUMBER: 126:235770
TITLE: Scanning electron microscopy of **polyhydroxyalkanoate** degradation by bacteria
AUTHOR(S): Molitoris, H. P.; Moss, S. T.; De Koning, G. J. M.; Jendrossek, D.
CORPORATE SOURCE: Inst. Botanik, Univ. Regensburg, Regensburg, D-93040, Germany
SOURCE: Applied Microbiology and Biotechnology (1996), 46(5/6), 570-579
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer
DOCUMENT TYPE: Journal

LANGUAGE: English
ED Entered STN: 21 Feb 1997
AB Bacterial degradation of sheets of selected **polyhydroxyalkanoates** by Comamonas sp., **Pseudomonas** lemoignei and **Pseudomonas** fluorescens GK13 is reported. Five natural **polyhydroxyalkanoates** were used, namely poly(3-hydroxybutyrate), poly(3-hydroxyvalerate), a **copolymer** of 3-hydroxybutyrate and 3-hydroxyvalerate, a **copolymer** of mainly 3-hydroxyoctanoate and minor amts. of 3-hydroxyhexanoate, and two rubber-like **copolymers** of saturated and unsatd. hydroxyalkanoic acids that were modified by electron-beam-induced crosslinking. Each of these polymers was degraded by at least one bacterial strain, the rate of hydrolysis being dependent on the surface area of the polymer exposed to attack. SEM of partially degraded samples showed that hydrolysis started at the surface and at phys. lesions in the polymer and proceeded to the inner part of the material. No evidence for areas of non-degradable polymer was found for any of the polymers analyzed, even if the polymer contained chemical cross-links.
IT **128971-78-8**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(SEM of **polyhydroxyalkanoate** degradation by bacteria)
RN 128971-78-8 HCAPLUS
CN 7-Octenoic acid, 3-hydroxy-, (R)-, polymer with (R)-3-hydroxyhexanoic acid, (R)-3-hydroxy-5-hexenoic acid and (R)-3-hydroxyoctanoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 119003-50-8
CMF C8 H14 O3

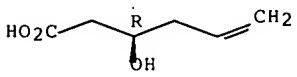
Absolute stereochemistry.



CM 2

CRN 119003-49-5
CMF C6 H10 O3

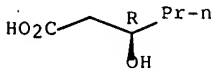
Absolute stereochemistry.



CM 3

CRN 77877-35-1
CMF C6 H12 O3

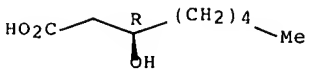
Absolute stereochemistry. Rotation (-).



CM 4

CRN 44987-72-6
CMF C8 H16 O3

Absolute stereochemistry.

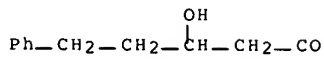


CC 10-2 (Microbial, Algal, and Fungal Biochemistry)
Section cross-reference(s): 35
ST **polyhydroxyalkanoate** degrdn bacteria SEM
IT Bacteria (Eubacteria)
Comamonas
Pseudomonas
Scanning electron microscopy
(SEM of **polyhydroxyalkanoate** degradation by bacteria)
IT Decomposition
(biodegrdn.; SEM of **polyhydroxyalkanoate** degradation by bacteria)
IT Polymer degradation
(biol.; SEM of **polyhydroxyalkanoate** degradation by bacteria)
IT Polyesters, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(hydroxycarboxylic acid-based; SEM of **polyhydroxyalkanoate** degradation by bacteria)
IT **128971-78-8** 141455-97-2 141901-08-8 154994-48-6 155075-32-4 160555-53-3 262373-27-3
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(SEM of **polyhydroxyalkanoate** degradation by bacteria)

L64 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:352644 HCAPLUS Full-text
DOCUMENT NUMBER: 125:53235
TITLE: Sequential production of two different polyesters in the inclusion bodies of **Pseudomonas** oleovorans
AUTHOR(S): Curley, Joanne M.; Lenz, Robert W.; Fuller, R. Clinton
CORPORATE SOURCE: Dep. Polym. Sci. Eng., Univ. Massachusetts, Amherest, MA, 01003, USA
SOURCE: International Journal of Biological Macromolecules (1996), 19(1), 29-34
CODEN: IJBMDR; ISSN: 0141-8130
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 18 Jun 1996
AB When **Pseudomonas** oleovorans was grown on a mixture of 5-phenylvaleric acid, PVA, and nonanoic acid, NA, the reserve polyester produced included both a homopolymer and a **copolymer**. The homopolymer poly-3-hydroxy-5- phenylvalerate, PHPV, contained only 3-hydroxy-5-phenylvalerate units, while the **copolymer** contained the same long-chain 3-hydroxyalkanoates as those present in the **copolymer** poly-3-hydroxynonanoate, PHN, which is produced from nonanoic acid alone. The intracellular location of each of these polymers was determined by selective staining of the inclusion body granules with ruthenium tetraoxide and examination by transmission electron microscopy showed that both types of polyesters occurred in the same granule. PHN was present in the center of the granule, while PHPV accumulated around the PHN in the inclusion body. The proteins associated with the inclusion bodies wee separated using sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE). In all cases, two different polymerase enzymes of mol. weight 59 and 55 KDa were present, indicating that the same polymerase enzyme system was responsible for the production of both PHN and PHPV. Attempts were made to produce a random **copolymer** containing both alkyl and phenylalkyl repeat units by varying the growth conditions, but a mixture of PHN and PHPV was always produced instead.
IT **134736-36-0P**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation)
(sequential production of 2 different polyesters in the inclusion bodies of **Pseudomonas** oleovorans)
RN 134736-36-0 HCAPLUS
CN Benzenepentanoic acid, β-hydroxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 41479-99-6
CMF C11 H14 O3



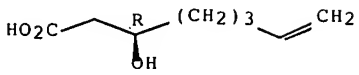
CC 10-2 (Microbial, Algal, and Fungal Biochemistry)
ST polyester sequential formation **Pseudomonas** inclusion body; **polyhydroxyalkanoate** sequential formation **Pseudomonas** inclusion body
IT Inclusion bodies
Pseudomonas oleovorans
(sequential production of 2 different polyesters in the inclusion bodies of **Pseudomonas** oleovorans)
IT 134688-88-3, Hydroxyalkanoate polymerase
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(sequential production of 2 different polyesters in the inclusion bodies of **Pseudomonas** oleovorans)
IT 120659-39-4P **134736-36-0P**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation)
(sequential production of 2 different polyesters in the inclusion bodies of **Pseudomonas** oleovorans)
IT 112-05-0, Nonanoic acid 2270-20-4, 5-Phenylvaleric acid
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(sequential production of 2 different polyesters in the inclusion bodies of **Pseudomonas** oleovorans)

L64 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:516180 HCAPLUS Full-text
DOCUMENT NUMBER: 113:116180
TITLE: Physical characteristics of poly(3-hydroxyalkanoates) and poly(3-hydroxyalkenoates) produced by **Pseudomonas** oleovorans grown on aliphatic hydrocarbons
AUTHOR(S): Preusting, Hans; Nijenhuis, Atze; Witholt, Bernard
CORPORATE SOURCE: Groningen Biotechnol. Cent., Univ. Groningen, Groningen, 9747 AG, Neth.
SOURCE: Macromolecules (**1990**), 23(19), 4220-4
CODEN: MAMOBX; ISSN: 0024-9297
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 29 Sep 1990
AB **Pseudomonas** oleovorans accumulated poly(3- hydroxyalkanoates) (PHAs) after growth on n-alkanes and 1-alkenes. The composition and phys. characteristics of these polyesters were substrate dependent. When n-alkanes (n-hexane to n-decane) were used, PHAs were formed consisting of 3-hydroxyalkanoate monomers of which the pendant group varied from a Me to a heptyl group (saturated PHAs). When 1-alkenes (1-octene and 1-decene) were used as the carbon source, the polyester consisted of both 3-hydroxyalkanoate and terminally unsatd. 3-hydroxyalkenoate monomers, of which the pendant group varied in length between a Pr and a heptyl group (unsatd. PHAs). The structure of the PHAs was confirmed by 1H and 13C NMR. Apart from the PHAs isolated from n-hexane and 1-alkene grown cells, the copolymers were partly crystalline (Δhm = 6.6-18.7 J/g), having m.ps. which varied between 38.9 and 58.5° and glass temps. (Tg) from -30.8 to -39.7°. The Tg's of the amorphous polymers ranged from -25.8 to -43.1°. The mol. wts. of the isolated polymers ranged from 178,000 to 330,000.
IT **128971-78-8P 128999-53-1P**
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(biochem. preparation and structure of, from **Pseudomonas** oleovorans, effect of feed substrate on)
RN 128971-78-8 HCAPLUS
CN 7-Octenoic acid, 3-hydroxy-; (R)-, polymer with (R)-3-hydroxyhexanoic acid, (R)-3-hydroxy-5-hexenoic acid and (R)-3-hydroxyoctanoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 119003-50-8
CMF C8 H14 O3

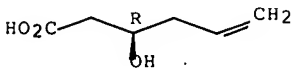
Absolute stereochemistry.



CM 2

CRN 119003-49-5
CMF C6 H10 O3

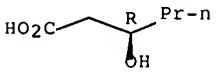
Absolute stereochemistry.



CM 3

CRN 77877-35-1
CMF C6 H12 O3

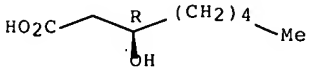
Absolute stereochemistry. Rotation (-).



CM 4

CRN 44987-72-6
CMF C8 H16 O3

Absolute stereochemistry.

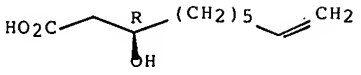


RN 128999-53-1 HCAPLUS
CN 9-Decenoic acid, 3-hydroxy-, (R)-, polymer with
(R)-3-hydroxydecanoic acid, (R)-3-hydroxyhexanoic acid,
(R)-3-hydroxy-5-hexenoic acid, (R)-3-hydroxynonanoic acid,
(R)-3-hydroxyoctanoic acid and (R)-3-hydroxy-7-octenoic acid (9CI)
(CA INDEX NAME)

CM 1

CRN 119003-52-0
CMF C10 H18 O3

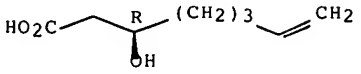
Absolute stereochemistry.



CM 2

CRN 119003-50-8
CMF C8 H14 O3

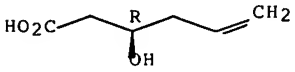
Absolute stereochemistry.



CM 3

CRN 119003-49-5
CMF C6 H10 O3

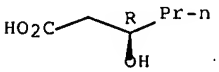
Absolute stereochemistry.



CM 4

CRN 77877-35-1
CMF C6 H12 O3

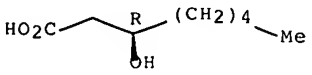
Absolute stereochemistry. Rotation (-).



CM 5

CRN 44987-72-6
CMF C8 H16 O3

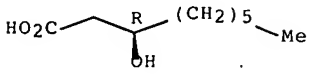
Absolute stereochemistry.



CM 6

CRN 33796-87-1
CMF C9 H18 O3

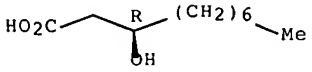
Absolute stereochemistry.



CM 7

CRN 19525-80-5
CMF C10 H20 O3

Absolute stereochemistry. Rotation (-).

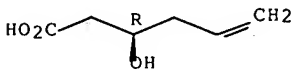


CC 36-2 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35
ST **Pseudomonas** oleovorans **polyhydroxyalkanoate** structure property
IT Polyesters, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(biochem. preparation of, from **Pseudomonas** oleovorans, feed substrate effect on structure in relation to)
IT Crystallinity
Glass temperature and transition
(of biochem. prepared **poly(hydroxyalkanoates**))
IT **Pseudomonas oleovorans**
(**polyhydroxyalkanoates** produced from, structure of, feed substrate effect on)
IT 128971-75-5P 128971-76-6P 128971-77-7P **128971-78-8P** 128999-52-0P **128999-53-1P** 174793-36-3P
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(biochem. preparation and structure of, from **Pseudomonas** oleovorans, effect of feed substrate on)
IT 110-54-3, Hexane, properties 111-65-9, Octane, properties 111-66-0, 1-Octene 111-84-2, Nonane 124-18-5, Decane 142-82-5, Heptane, properties 872-05-9, 1-Decene
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(substrate, for biochem. production of **poly(hydroxyalkanoates)** from **Pseudomonas** oleovorans, structure in relation to)

L64 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1989:91797 HCAPLUS Full-text
DOCUMENT NUMBER: 110:91797
TITLE: Formation of polyesters by **Pseudomonas** oleovorans: effect of substrates on formation and composition of poly-(R)-3-hydroxyalkanoates and poly-(R)-3-hydroxyalkenoates
AUTHOR(S): Lageveen, Roland G.; Huisman, Gjalt W.; Preusting, Hans; Ketelaar, Peter; Eggink,

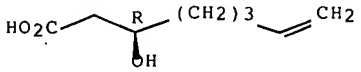
Gerrit; Witholt, Bernard
CORPORATE SOURCE: Groningen Biotechnol. Cent., Univ. Groningen, Groningen, 9747 AG, Neth.
SOURCE: Applied and Environmental Microbiology (1988), 54(12), 2924-32
CODEN: AEMIDF; ISSN: 0099-2240
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 17 Mar 1989
AB P. oleovorans grows on C6 to C12 n-alkanes and 1-alkenes. These substrates are oxidized to the corresponding fatty acids, which are oxidized further via the β-oxidation pathway, yielding shorter fatty acids which have lost one or more C2 units. P. oleovorans normally utilizes β-oxidation pathway intermediates for growth, but in this study, the intermediate 3-hydroxy fatty acids can also be polymerized to intracellular poly-(R)-3-hydroxyalkanoates (PHAs) when the medium contains limiting amts. of essential elements, such as nitrogen. The monomer composition of these polyesters is a reflection of the substrates used for growth of P. oleovorans. The largest monomer found in PHAs always contained as many C atoms as did the n-alkane used as a substrate. Monomers which were shorter by one or more C2 units were also observed Thus, for C-even substrates, only C-even monomers were found, with (R)-3-hydroxyheptanoate as the smallest monomer. 1-Alkenes were also incorporated into PHAs, albeit less efficiently and with lower yields than n-alkanes. These PHAs contained both saturated and unsatd. monomers, apparently because the 1-alkene substrates could be oxidized to carboxylic acids at either the saturated or the unsatd. ends. Up to 55% of the PHA monomers contained terminal double bonds when P. oleovorans was grown on 1-alkenes. The degree of unsatn. of PHAs could be modulated by varying the ratio of alkenes to alkanes in the growth medium. Since 1-alkenes were also shortened before being polymerized, as was the case for n-alkanes, copolymers which varied with respect to both monomer chain length and the percentage of terminal double bonds were formed during nitrogen-limited growth of P. oleovorans on 1-alkenes. Such polymers are expected to be useful for future chemical modifications.
IT **119003-49-5 119003-50-8 119003-51-9**
119003-52-0
RL: BIOL (Biological study)
(in polyester formed by **Pseudomonas** oleovorans)
RN 119003-49-5 HCAPLUS
CN 5-Hexenoic acid, 3-hydroxy-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



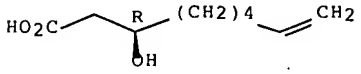
RN 119003-50-8 HCAPLUS
CN 7-Octenoic acid, 3-hydroxy-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



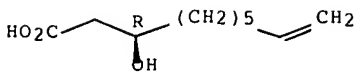
RN 119003-51-9 HCAPLUS
CN 8-Nonenoic acid, 3-hydroxy-, (3R)- (CA INDEX NAME)

Absolute stereochemistry.



RN 119003-52-0 HCAPLUS
CN 9-Decenoic acid, 3-hydroxy-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



CC 10-2 (Microbial Biochemistry)
ST polyester formation **Pseudomonas**
polyhydroxyalkanoate polyhydroxyalkenoate
IT Polyesters, biological studies
RL: BIOL (Biological study)
(in polyester formed by **Pseudomonas** oleovorans)
IT Alkanes, biological studies
Alkenes, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metabolism of, by **Pseudomonas** oleovorans, polyesters formation in relation to)
IT **Pseudomonas oleovorans**
(**polyhydroxyalkanoates** and polyhydroxyalkenoates formation by, substrates effect on)
IT 7787-35-1 19525-80-5 28254-78-6 33796-87-1 44987-72-6 85233-44-9 97961-62-1 **119003-49-5 119003-50-8 119003-51-9 119003-52-0**
RL: BIOL (Biological study)
(in polyester formed by **Pseudomonas** oleovorans)
IT 110-54-3, Hexane, biological studies 111-65-9, Octane, biological studies 111-66-0, 1-Octene 111-84-2, Nonane 112-40-3, Dodecane 112-41-4, 1-Dodecene 124-11-8, 1-Nonene 124-18-5, Decane 142-82-5, Heptane, biological studies 592-41-6, 1-Hexene, biological studies 872-05-9, 1-Decene 1120-21-4, Undecane
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metabolism of, by **Pseudomonas** oleovorans, polyesters formation in relation to)

=> d l64 12-15 ibib ed ab hit ind

L64 ANSWER 12 OF 15 MEDLINE on STN
ACCESSION NUMBER: 91175643 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 2078535
TITLE: Production of unsaturated polyesters by **Pseudomonas** oleovorans.
AUTHOR: Fritzsche K; Lenz R W; Fuller R C
CORPORATE SOURCE: Department of Polymer Science and Engineering, University of Massachusetts, Amherst 01003.
SOURCE: International journal of biological macromolecules, (1990 Apr) Vol. 12, No. 2, pp. 85-91.
Journal code: 7909578. ISSN: 0141-8130.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199105
ENTRY DATE: Entered STN: 19 May 1991
Last Updated on STN: 19 May 1991
Entered Medline: 1 May 1991
ED Entered STN: 19 May 1991
Last Updated on STN: 19 May 1991
Entered Medline: 1 May 1991
AB **Pseudomonas** oleovorans was grown separately on 3-hydroxy-6-octenoic acid and 3-hydroxy-7-octenoic acid as the only carbon source and under ammonium nutrient-limiting conditions to produce storage polyesters. The polyesters produced contained mainly unsaturated C8 units. Small amounts of both the saturated and the unsaturated C6 units were also present, but only about 1% of the saturated 3-hydroxyoctanoate units was detected. The polyester obtained from 3-hydroxy-6-octenoic acid, which was a mixture of the cis and trans isomers, also contained units with cis and trans double bonds. The weight average molecular weights of the polymers produced were in the range of 339,000-383,000 as determined by g.p.c. relative to polystyrene, with Mw/Mn ratios of 1.8-2.1. The mechanism of PHA formation from n-octene previously reported is discussed in relation to the present results, and the two were found to be in good agreement.
TI Production of unsaturated polyesters by **Pseudomonas** oleovorans.

AB **Pseudomonas** oleovorans was grown separately on 3-hydroxy-6-octenoic acid and 3-hydroxy-7-octenoic acid as the only carbon source and under ammonium nutrient-limiting conditions to produce storage polyesters. The polyesters produced contained mainly unsaturated C8 units. Small amounts of both the saturated and the unsaturated C6 units were also present, but only about 1% of the saturated 3-hydroxyoctanoate units was detected. The polyester obtained from 3-hydroxy-6-octenoic acid, which was a mixture of the cis and trans isomers, also contained units with cis and trans double bonds. The weight average molecular weights of the polymers produced were in the range of 339,000-383,000 as determined by g.p.c. relative to polystyrene, with Mw/Mn ratios of 1.8-2.1. The mechanism of PHA formation from n-octene previously reported is discussed in relation to the present results, and the two were found to be in good agreement.

CT Culture Media
*Fatty Acids, Monounsaturated: ME, metabolism
*Hydroxy Acids: ME, metabolism
Macromolecular Substances
Magnetic Resonance Spectroscopy
Molecular Weight
*Polymers: ME, metabolism
Pseudomonas: GD, growth & development
***Pseudomonas: ME, metabolism**

RN **120676-01-9 (3-hydroxy-7-octenoic acid)**; 128940-64-7 (3-hydroxy-6-octenoic acid)

CT Culture Media
*Fatty Acids, Monounsaturated: ME, metabolism
*Hydroxy Acids: ME, metabolism
Macromolecular Substances
Magnetic Resonance Spectroscopy
Molecular Weight
*Polymers: ME, metabolism
Pseudomonas: GD, growth & development
***Pseudomonas: ME, metabolism**

RN **120676-01-9 (3-hydroxy-7-octenoic acid)**; 128940-64-7 (3-hydroxy-6-octenoic acid)

CN 0 (Culture Media); 0 (Fatty Acids, Monounsaturated); 0 (Hydroxy Acids); 0 (Macromolecular Substances); 0 (Polymers)

L64 ANSWER 13 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2005:401806 BIOSIS Full-text
DOCUMENT NUMBER: PREV200510189913
TITLE: Molecular characterization of extracellular medium-chain-length poly(3-hydroxyalkanoate) depolymerase genes from **Pseudomonas** alcaligenes strains.
AUTHOR(S): Kim, Do Young; Kim, Hyun Chul; Kim, Sun Young; Rhee, Young Ha [Reprint Author]
CORPORATE SOURCE: Chungnam Natl Univ, Sch Biosci and Biotechnol, Dept Microbiol, Taejon 305764, South Korea
yhrhee@cnu.ac.kr
SOURCE: Journal of Microbiology, (JUN 2005) Vol. 43, No. 3, pp. 285-294.
ISSN: 1225-8873.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 5 Oct 2005
Last Updated on STN: 5 Oct 2005
ED Entered STN: 5 Oct 2005
Last Updated on STN: 5 Oct 2005

AB A bacterial strain M4-7 capable of degrading various polyesters, such as poly(c-caprolactone), poly(3-hydroxybutyrate-co-3- hydroxyvalerate), poly(3-hydroxyoctanoate), and poly(3-hydroxy-5-phenylvalerate), was isolated from a marine environment and identified as **Pseudomonas** alcaligenes. The relative molecular mass of a purified extracellular medium-chain-length poly(3-hydroxyalkanoate) (MCL-PRA) depolymerase (PhaZ(PalM4-7)) from P. alcaligenes M4-7 was 28.0 kDa, as determined by SDS-PAGE. The PhaZ(PalM4-7) was most active in 50 mM glycine-NaOH buffer (pH 9.0) at 35 degrees C. It was insensitive to dithiothreitol, sodium azide, and iodoacetamide, but susceptible to p-hydroxymercuribenzoic acid, N-bromosuccinimide, acetic anhydride, EDTA, diisopropyl fluorophosphate, phenylmethylsulfonyl fluoride, Tween 80, and Triton X-100. In this study, the genes encoding MCL-PHA depolymerase were cloned, sequenced, and characterized from a soil bacterium, P alcaligenes LB19 (Kim et al., 2002, Biomacromolecules 3, 291-296) as well as P alcaligenes M4-7. The structural gene (PhaZ(PalLB19)) of MCL-PHA depolymerase of P alcaligenes LB19 consisted of an 837 bp open reading frame (ORF) encoding a protein of 278 amino acids with a deduced M-r of 30,188 Da. However, the MCL-PHA depolymerase gene (phaZ(PalM4-7)) of P alcaligenes M4-7 was composed of an 834 bp ORF encoding a protein of 277 amino acids with a deduced M-r of 30,323 Da. Amino acid sequence analyses showed that, in the two different polypeptides, a substrate-binding domain and a catalytic domain are located in the N-terminus and in the C-terminus, respectively. The PhaZ(PalLB19) and the PhaZ(PalM4-7) commonly share the lipase box, GISSG in their catalytic domains, and utilize (111)Asn and (110)Ser residues, respectively, as oxyanions that play an important role in transition-state stabilization of hydrolytic reactions.

TI Molecular characterization of extracellular medium-chain-length poly(3-hydroxyalkanoate) depolymerase genes from **Pseudomonas** alcaligenes strains.

AB A bacterial strain M4-7 capable of degrading various polyesters, such as poly(c-caprolactone), poly(3-hydroxybutyrate-co-3- hydroxyvalerate), poly(3-hydroxyoctanoate), and poly(3-hydroxy-5-phenylvalerate), was isolated from a marine environment and identified as **Pseudomonas** alcaligenes. The relative molecular mass of a purified extracellular medium-chain-length poly(3-hydroxyalkanoate) (MCL-PRA) depolymerase

(PhaZ(PalM4-7)) from P. alcaligenes M4-7 was 28.0 kDa, as determined by SDS-PAGE. The PhaZ(PalM4-7) was most active in 50 mM glycine-NaOH buffer (pH 9.0) at 35 degrees C. It was insensitive to dithiothreitol, sodium azide, and iodoacetamide, but susceptible to p-hydroxymercuribenzoic acid, N-bromosuccinimide, acetic anhydride, EDTA, diisopropyl fluorophosphate, phenylmethylsulfonyl fluoride, Tween 80, and Triton X-100. In this study, the genes encoding MCL-PHA depolymerase were cloned, sequenced, and characterized from a soil bacterium, P alcaligenes LB19 (Kim et al., 2002, Biomacromolecules 3, 291-296) as.well as P alcaligenes M4-7. The structural gene (PhaZ(PalLB19)) of MCL-PHA depolymerase of P alcaligenes LB19 consisted of an 837 bp open reading frame (ORF) encoding a protein of 278 amino acids with a deduced M-r of 30,188 Da. However, the MCL-PHA depolymerase gene (phaZ(PalM4-7)) of P alcaligenes M4-7 was composed of an 834 bp ORF encoding a protein of 277 amino acids with a deduced M-r of 30,323 Da. Amino acid sequence analyses showed that, in the two different polypeptides, a substrate-binding domain and a catalytic domain are located in the N-terminus and in the C-terminus, respectively. The PhaZ(PalLB19) and the PhaZ(PalM4-7) commonly share the lipase box, GISSG in their catalytic domains, and utilize (111)Asn and (110)Ser residues, respectively, as oxyanions that play an important role in transition-state stabilization of hydrolytic reactions.

ORGN Classifier
Pseudomonadaceae 06508
Super Taxa
Gram-Negative Aerobic Rods and Cocci; Eubacteria; Bacteria; Microorganisms
Organism Name
Pseudomonas alcaligenes (species): strain-LB19, strain-M4-7
Taxa Notes
Bacteria, Eubacteria, Microorganisms
RN 60-00-4 (EDTA)
108-24-7 (acetic anhydride)
3483-12-3 (dithiothreitol)
9002-93-1 (Triton X-100)
26628-22-8 (sodium azide)
128-08-5 (N-bromosuccinimide)
9005-65-6 (Tween 80)
55-91-4 (diisopropyl fluorophosphate)
144-48-9 (iodoacetamide)
329-98-6 (phenylmethylsulfonyl fluoride)
134736-36-0 (poly(3-hydroxy-5-phenylvalerate))
1126-48-3 (p-hydroxymercuribenzoic acid)
GEN **Pseudomonas** alcaligenes MCL-PHA gene (Pseudomonadaceae)
CC Genetics - General 03502
Biochemistry studies - General 10060
Physiology and biochemistry of bacteria 31000
Genetics of bacteria and viruses 31500
IT Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics)
IT Chemicals & Biochemicals
EDTA; acetic anhydride; dithiothreitol; Triton X-100; sodium azide; N-bromosuccinimide; Tween 80; diisopropyl fluorophosphate; iodoacetamide; phenylmethylsulfonyl fluoride; poly(3-hydroxybutyrate-co-3-hydroxyvalerate); poly(3-hydroxyoctanoate); poly(alpha-caprolactone); poly(3-hydroxy-5-phenylvalerate); poly(3-hydroxyalkanoates); p-hydroxymercuribenzoic acid
IT Methods & Equipment
SDS-polyacrylamide gel electrophoresis [SDS-PAGE]: electrophoretic techniques, laboratory techniques
IT Miscellaneous Descriptors
molecular ccaracterization
ORGN Classifier
Pseudomonadaceae 06508
Super Taxa
Gram-Negative Aerobic Rods and Cocci; Eubacteria; Bacteria; Microorganisms
Organism Name
Pseudomonas alcaligenes (species): strain-LB19, strain-M4-7
Taxa Notes
Bacteria, Eubacteria, Microorganisms
RN 60-00-4 (EDTA)
108-24-7 (acetic anhydride)
3483-12-3 (dithiothreitol)
9002-93-1 (Triton X-100)
26628-22-8 (sodium azide)
128-08-5 (N-bromosuccinimide)
9005-65-6 (Tween 80)
55-91-4 (diisopropyl fluorophosphate)
144-48-9 (iodoacetamide)
329-98-6 (phenylmethylsulfonyl fluoride)
134736-36-0 (poly(3-hydroxy-5-phenylvalerate))

1126-48-3 (p-hydroxymercuribenzoic acid)
GEN **Pseudomonas** alcaligenes MCL-PHA gene (Pseudomonadaceae)

L64 ANSWER 14 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 1999:526726 BIOSIS Full-text
DOCUMENT NUMBER: PREV199900526726
TITLE: Intracellular depolymerase activity in isolated inclusion bodies containing **polyhydroxyalkanoates** with long alkyl and functional substituents in the side chain.
AUTHOR(S): Foster, L. J. R.; Lenz, R. W.; Fuller, R. C. [Reprint author]
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Massachusetts, Amherst, MA, 01003, USA
SOURCE: International Journal of Biological Macromolecules, (Nov., 1999) Vol. 26, No. 2-3, pp. 187-192. print. CODEN: IJBMDR. ISSN: 0141-8130.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 10 Dec 1999
Last Updated on STN: 5 Jun 2000
ED Entered STN: 10 Dec 1999
Last Updated on STN: 5 Jun 2000
AB The in vitro degradation of isolated **Pseudomonas** oleovorans inclusion bodies containing either poly-3- hydroxynonanoate (PHN), or poly(-3-hydroxy-5-phenylvalerate) (PHPV), or a mixture of these two polymers was investigated. When incubated at 30degreeC and pH 9, inclusion bodies containing either polyhydroxyoctanoate (PHO), PHN or PHPV exhibited similar degradation rates of approximately 0.94 (+-3%) mg/h. The PHN and PHPV components for inclusion bodies containing a mixture of PHN and PHPV showed similar degradation rates; that is the ratios showed little change and remained at approximately 50 weight% (+-3%) for each component. These results contrast markedly with in vivo studies for similar inclusion bodies in whole cells. The results suggest that the synthesis and degradation of these novel **polyhydroxyalkanoates** by P. oleovorans proceeds by the same enzymatic pathway. In addition, comparisons between the in vivo and in vitro polymer degradation suggest that the activity of the intracellular depolymerase does not control the rate limiting step of PHPV degradation in vivo. Instead, the presence of an aromatic group in the repeating units of this polymer may inhibit the utilization of the monomeric units of PHPV as a reserve carbon source by the cells.
TI Intracellular depolymerase activity in isolated inclusion bodies containing **polyhydroxyalkanoates** with long alkyl and functional substituents in the side chain.
AB The in vitro degradation of isolated **Pseudomonas** oleovorans inclusion bodies containing either poly-3- hydroxynonanoate (PHN), or poly(-3-hydroxy-5-phenylvalerate) (PHPV), or a mixture of these two polymers was investigated. When incubated at 30degreeC and pH 9, inclusion bodies containing either polyhydroxyoctanoate (PHO), PHN or PHPV exhibited similar degradation rates of approximately 0.94 (+-3%) mg/h. The PHN and PHPV components for inclusion bodies containing a mixture of PHN and PHPV showed similar degradation rates; that is the ratios showed little change and remained at approximately 50 weight% (+-3%) for each component. These results contrast markedly with in vivo studies for similar inclusion bodies in whole cells. The results suggest that the synthesis and degradation of these novel **polyhydroxyalkanoates** by P. oleovorans proceeds by the same enzymatic pathway. In addition, comparisons between the in vivo and in vitro polymer degradation suggest that the activity of the intracellular depolymerase does not control the rate limiting step of PHPV degradation in vivo. Instead, the presence of an aromatic group in the repeating units of this polymer may inhibit the utilization of the monomeric units of PHPV as a reserve carbon source by the cells.
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics)
IT Parts, Structures, & Systems of Organisms
inclusion bodies
IT Chemicals & Biochemicals
depolymerase: intracellular; poly(-3-hydroxy-5-phenylvalerate) [PHPV]; poly(-3-hydroxyonanoate [PHN]; **polyhydroxyalkanoates**
ORGN Classifier
Pseudomonadaceae 06508
Super Taxa
Gram-Negative Aerobic Rods and Cocci; Eubacteria; Bacteria; Microorganisms
Organism Name
Pseudomonas oleovorans
Taxa Notes
Bacteria, Eubacteria, Microorganisms
RN 9030-73-3 (depolymerase)
134736-36-0 (poly(-3-hydroxy-5-phenylvalerate))
134736-36-0 (PHPV)
CC Enzymes - General and comparative studies: coenzymes 10802
Biochemistry studies - General 10060
Physiology and biochemistry of bacteria 31000
Food microbiology - General and miscellaneous 39008
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics)

IT Parts, Structures, & Systems of Organisms
inclusion bodies
IT Chemicals & Biochemicals
depolymerase: intracellular; poly(-3-hydroxy-5-phenylvalerate) [PHPV]; poly-3-hydroxyonanoate [PHN]; **polyhydroxyalkanoates**
IT Miscellaneous Descriptors
industrial microbiology
ORGN Classifier
Pseudomonadaceae 06508
Super Taxa
Gram-Negative Aerobic Rods and Cocci; Eubacteria; Bacteria; Microorganisms
Organism Name
Pseudomonas oleovorans
Taxa Notes
Bacteria, Eubacteria, Microorganisms
RN 9030-73-3 (depolymerase)
134736-36-0 (poly(-3-hydroxy-5-phenylvalerate))
134736-36-0 (PHPV)

L64 ANSWER 15 OF 15 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 1999:39335 BIOSIS Full-text
DOCUMENT NUMBER: PREV199900039335
TITLE: Isolation of an aromatic **polyhydroxyalkanoates**-degrading bacterium.
AUTHOR(S): Ju, He-Sug; Kim, Jungho; Kim, Hoon [Reprint author]
CORPORATE SOURCE: Dep. Agric. Chem., Sunchon Natl. Univ., Sunchon 540-742, South Korea
SOURCE: Journal of Microbiology and Biotechnology, (Oct., 1998) Vol. 8, No. 5, pp. 540-542. print.
ISSN: 1017-7825.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Feb 1999
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ED Entered STN: 3 Feb 1999
Last Updated on STN: 3 Feb 1999
AB Five microorganisms capable of degrading an aromatic medium-chain-length **polyhydroxyalkanoate** (PHAMCL), poly(3-hydroxy-5-phenylvalerate) (PHPV), were isolated from wastewater-treatment sludge. Among the isolates, JS02 showed degrading activity consistently during several transfers. The isolate JS02 could hydrolyze another aromatic MCL copolyester, poly(3-hydroxy-5phenoxyvalerate-co-3-hydroxy-7-phenoxyheptanoate), (P (5POHV-co-7POHH)), and other short-chain-length PHAs (PHASCL) such as poly(3-hydroxybutyrate) (P3(HB)), poly(3-hydroxybutyrate- co-4-hydroxybutyrate) (P(3HB-co-4HB)), and poly(3-hydroxybutyrate- co-3-hydroxyvalerate) (P(3HB-co-3HV)) with relatively low activity. The culture supernatant of JS02 showed hydrolyzing activity for the p-nitrophenyl esters of fatty acids.
TI Isolation of an aromatic **polyhydroxyalkanoates**-degrading bacterium.
AB Five microorganisms capable of degrading an aromatic medium-chain-length **polyhydroxyalkanoate** (PHAMCL), poly(3-hydroxy-5-phenylvalerate) (PHPV), were isolated from wastewater-treatment sludge. Among the isolates, JS02 showed degrading activity consistently during several transfers. The isolate JS02 could hydrolyze another aromatic MCL copolyester, poly(3-hydroxy-5phenoxyvalerate-co-3-hydroxy-7-phenoxyheptanoate), (P (5POHV-co-7POHH)), and other short-chain-length PHAs (PHASCL) such as poly(3-hydroxybutyrate) (P3(HB)), poly(3-hydroxybutyrate- co-4-hydroxybutyrate) (P(3HB-co-4HB)), and poly(3-hydroxybutyrate- co-3-hydroxyvalerate) (P(3HB-co-3HV)) with relatively low activity. The culture supernatant of JS02 showed hydrolyzing activity for the p-nitrophenyl esters of fatty acids.
IT Major Concepts
Bacteriology; Metabolism; Methods and Techniques
IT Chemicals & Biochemicals
aromatic **polyhydroxyalkanoate**: degradation, isolation; poly(3-hydroxy-5-phenylvalerate)
RN **134736-36-0** (poly(3-hydroxy-5-phenylvalerate))
CC Microbiological apparatus, methods and media 32000
Biochemistry methods - General 10050
Biophysics - Methods and techniques 10504
Metabolism - General metabolism and metabolic pathways 13002
Physiology and biochemistry of bacteria 31000
IT Major Concepts
Bacteriology; Metabolism; Methods and Techniques
IT Chemicals & Biochemicals
aromatic **polyhydroxyalkanoate**: degradation, isolation; poly(3-hydroxy-5-phenylvalerate)
IT Methods & Equipment
bacteria isolation: Isolation/Purification Techniques: CT, isolation method; bacterial culture: cell culture techniques, culture method; gas chromatography: chromatographic techniques, isolation method

ORGN Classifier
Bacteria 05000
Super Taxa
Microorganisms
Organism Name
bacteria
Taxa Notes
Bacteria, Eubacteria, Microorganisms
RN 134736-36-0 (poly(3-hydroxy-5-phenylvalerate))

FULL SEARCH HISTORY

=> d his nofile

(FILE 'HOME' ENTERED AT 10:21:20 ON 30 AUG 2007)

FILE 'HCAPLUS' ENTERED AT 10:21:28 ON 30 AUG 2007
E US20060211100/PN
L1 1 SEA ABB=ON PLU=ON US20060211100/PN
D ALL
SEL RN

FILE 'REGISTRY' ENTERED AT 10:22:32 ON 30 AUG 2007
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OR 112-05-0/BI OR 112-38-9/BI OR 113-24-6/BI OR
119003-51-9/BI OR 121739-61-5/BI OR 13907-47-6/BI OR
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694533-29-4/BI OR 694533-30-7/BI OR 694533-31-8/BI OR
7170-40-3/BI OR 7722-64-7/BI OR 818-88-2/BI)
D SCAN

FILE 'STNGUIDE' ENTERED AT 10:23:23 ON 30 AUG 2007

FILE 'REGISTRY' ENTERED AT 10:29:02 ON 30 AUG 2007
L3 28 SEA ABB=ON PLU=ON L2 AND C6/ES
D SCAN

FILE 'STNGUIDE' ENTERED AT 10:31:12 ON 30 AUG 2007

FILE 'LREGISTRY' ENTERED AT 10:34:01 ON 30 AUG 2007
L4 STR

FILE 'REGISTRY' ENTERED AT 10:38:33 ON 30 AUG 2007
E A/PCT
L5 1 SEA SSS SAM L4
D SCAN
L6 1299 SEA SSS FUL L4
SAV TEMP L6 LIL689REG/A
L7 10 SEA ABB=ON PLU=ON L2 AND L6
D SCAN
L8 134 SEA ABB=ON PLU=ON L6 AND PMS/CI
L9 1165 SEA ABB=ON PLU=ON L6 NOT L8
L10 20 SEA ABB=ON PLU=ON L6 AND (MEDLINE/LC OR BIOSIS/LC OR
DRUGU/LC OR EMBASE/LC)
D SCAN

FILE 'HCAPLUS' ENTERED AT 10:46:04 ON 30 AUG 2007
L11 25 SEA ABB=ON PLU=ON L7
L12 949 SEA ABB=ON PLU=ON L6
L13 1 SEA ABB=ON PLU=ON L1 AND L12
D SCAN
E PSEUDOMONAS/CT
E E3+ALL
L14 57652 SEA ABB=ON PLU=ON PSEUDOMONAS+PFT,OLD,NT/CT
L15 91 SEA ABB=ON PLU=ON L12 AND L14
L16 QUE ABB=ON PLU=ON PSEUDOMONAS?
L17 QUE ABB=ON PLU=ON POLYHYDROXYALKANOATE OR POLY(W)HYDR
OXYALKANOATE OR POLY(W)HYDROXY(W)ALKANOATE
L18 QUE ABB=ON PLU=ON COPOLYM? OR CO(W)POLYM?
L19 QUE ABB=ON PLU=ON L17(3A)L18

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L20      99 SEA ABB=ON  PLU=ON  L12 AND L16
L21      99 SEA ABB=ON  PLU=ON  L15 OR L20
L22    2313 SEA ABB=ON  PLU=ON  POLYHYDROXYALKANOATE OR POLY(W)HYDR
       OXYALKANOATE OR POLY(W)HYDROXY(W)ALKANOATE
L23      78 SEA ABB=ON  PLU=ON  L21 AND L22
L24       8 SEA ABB=ON  PLU=ON  L21 AND L19
       D SCAN
L25       1 SEA ABB=ON  PLU=ON  L1 AND L24
       D L24 1-8 AU
       DEL SEL
       SEL L1 AU
L26     763 SEA ABB=ON  PLU=ON  ("FUKUI, TATSUKI"/AU OR "HONMA,
       TSUTOMU"/AU OR "IMAMURA, TAKESHI"/AU OR "KENMOKU,
       TAKASHI"/AU OR "KOZAKI, SHINYA"/AU OR "MIHARA,
       CHIEKO"/AU OR "YANO, TETSUYA"/AU)
       E SUGAWA E/AU
L27        QUE ABB=ON  PLU=ON  SUGAWA E?/AU
L28      786 SEA ABB=ON  PLU=ON  L27 OR L26

  FILE 'ZCAPLUS' ENTERED AT 10:59:47 ON 30 AUG 2007
L29        QUE ABB=ON  PLU=ON  FUKUI T?/AU
L30        QUE ABB=ON  PLU=ON  HOMA T?/AU
L31        QUE ABB=ON  PLU=ON  IMAMURA T?/AU
L32        QUE ABB=ON  PLU=ON  KENMOKU T?/AU
L33        QUE ABB=ON  PLU=ON  KOZAKI S?/AU
L34        QUE ABB=ON  PLU=ON  MIHARA C?/AU
L35        QUE ABB=ON  PLU=ON  YANO T?/AU
L36        QUE ABB=ON  PLU=ON  L27 OR (L29 OR L30 OR L31 OR L32
       OR L33 OR L34 OR L35)
L37        QUE ABB=ON  PLU=ON  L27 AND L29 AND L30 AND L31 AND
       L32 AND L33 AND L34 AND L35

  FILE 'HCAPLUS' ENTERED AT 11:03:31 ON 30 AUG 2007
       D L1 PA

  FILE 'ZCAPLUS' ENTERED AT 11:03:31 ON 30 AUG 2007
       E CANON/PA
       E CANON KABUSHIKI/PA
L38        QUE ABB=ON  PLU=ON  (CANON(W)KABUSHIKI?)/PA,CS,SO,CO

  FILE 'HCAPLUS' ENTERED AT 11:04:52 ON 30 AUG 2007
L39        0 SEA ABB=ON  PLU=ON  L27 AND L29 AND L30 AND L31 AND
       L32 AND L33 AND L34 AND L35
L40        0 SEA ABB=ON  PLU=ON  L27 AND L29 AND L31 AND L32 AND
       L33 AND L34 AND L35
L41     9410 SEA ABB=ON  PLU=ON  L27 OR (L29 OR L30 OR L31 OR L32
       OR L33 OR L34 OR L35)
L42      122 SEA ABB=ON  PLU=ON  L41 AND L38
L43      119 SEA ABB=ON  PLU=ON  (L42 OR L28) AND L16
L44       80 SEA ABB=ON  PLU=ON  L43 AND L17
L45       21 SEA ABB=ON  PLU=ON  L43 AND L18
       D 1-3 KWIC
L46        QUE ABB=ON  PLU=ON  PY<2003 OR PRY<2003 OR AY<2003 OR
       MY<2003 OR REVIEW/DT
L47       20 SEA ABB=ON  PLU=ON  L45 AND L46
       SAV L47 LIL689HCPIN/A
L48       24 SEA ABB=ON  PLU=ON  L23 AND L18
L49       24 SEA ABB=ON  PLU=ON  L48 OR L24
L50       21 SEA ABB=ON  PLU=ON  L49 AND L46
L51        8 SEA ABB=ON  PLU=ON  L50 AND L24
L52       11 SEA ABB=ON  PLU=ON  L50 NOT L47
       SAV L52 LIL689HCP/A
       D QUE L52

  FILE 'MEDLINE, BIOSIS, DRUGU, EMBASE' ENTERED AT 11:14:08 ON 30
  AUG 2007
L53       67 SEA ABB=ON  PLU=ON  L10
L54        3 SEA ABB=ON  PLU=ON  L53 AND L16
L55        2 SEA ABB=ON  PLU=ON  L53 AND L17
L56        4 SEA ABB=ON  PLU=ON  L54 OR L55
L57      255 SEA ABB=ON  PLU=ON  L28
L58    10077 SEA ABB=ON  PLU=ON  L36 OR L57
L59       60 SEA ABB=ON  PLU=ON  L58 AND L38
L60       34 SEA ABB=ON  PLU=ON  L59 AND (L16 OR L17)
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STIC

56-56

L61 7 SEA ABB=ON PLU=ON L60 AND L46
D SCAN
SAV L61 LIL689MULTIN/A
L62 4 SEA ABB=ON PLU=ON L56 NOT L61
SAV L62 LIL689MULT/A

FILE 'STNGUIDE' ENTERED AT 11:19:54 ON 30 AUG 2007
D QUE L47
D QUE L61

FILE 'HCAPLUS, BIOSIS' ENTERED AT 11:22:00 ON 30 AUG 2007
L63 27 DUP REM L47 L61 (0 DUPLICATES REMOVED)
ANSWERS '1-20' FROM FILE HCAPLUS
ANSWERS '21-27' FROM FILE BIOSIS
D L63 1-27 IBIB ED AB
D QUE STAT L52
D QUE STAT L62

FILE 'HCAPLUS, MEDLINE, BIOSIS' ENTERED AT 11:23:35 ON 30 AUG 2007
L64 15 DUP REM L52 L62 (0 DUPLICATES REMOVED)
ANSWERS '1-11' FROM FILE HCAPLUS
ANSWER '12' FROM FILE MEDLINE
ANSWERS '13-15' FROM FILE BIOSIS
D L64 1-11 IBIB ED ABS HITSTR HITIND
D L64 12-15 IBIB ED AB HIT IND